

PLANNING OF METROPOLITAN AREAS AND NEW TOWNS

Meeting of the United Nations
Group of Experts
on Metropolitan Planning
and Development
Stockholm, 14-30 September 1961

United Nations Symposium
on the Planning
and Development of New Towns
Moscow, 24 August-7 September 1964



UNITED NATIONS
New York, 1967

NOTE

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ST/SOA/65

UNITED NATIONS PUBLICATION

Sales No.: 67. IV. 5

Price: \$U.S. 3.50
(or equivalent in other currencies)

FOREWORD*

Our world is in the midst of a fundamental transformation. We are witnessing its rapid change from agricultural and rural ways to a highly urbanized way of life with industry as the chief source of livelihood for progressively larger numbers of people. The push of so-called surplus populations from the world's rural areas, and the pull caused by the hope for more stable employment in the city, for better education and health, combine in the developing countries in particular to generate a steadily growing shift of people from the country to the city, a shift of such proportions that justify our thinking of it as the great twentieth century migration of people.

The long-term implications are evident in the economically advanced countries where new technology in agriculture, industry and transportation reduces the labour requirements for a given volume of production. Here the rural people and those living in stagnant small towns move to the great metropolitan regions. But simultaneously the higher income families drift outward from the decaying central city areas to new suburban communities.

Thus, although the movement of people from country to town is not a new phenomenon, the present explosive growth of cities and metropolitan agglomerations in all parts of the world is quite new and different.

The world was inhabited in the year 1800 by about 900 million people. In 1950 it was still about 80 per cent rural, and its population amounted to some 2.5 billion.¹ It may grow to as much as 6 billion at the end of the century. Between 1800 and 1950 the population living in cities of 100 thousand inhabitants has grown from 16 to almost 314 million, or about twenty times in 150 years. But at present about 60 million people are being added to the world total every year. Not only is the population of the world now doubling in size in a period of some twenty-three years, but the larger share of this growth goes to the already urbanized areas, and its heaviest concentration is experienced in the great metropolitan regions.

Both the rural and urban environment are deteriorating under the impact. Physical congestion and blight are now affecting vast areas; they appear to defy efforts towards improvement. They present seemingly insoluble problems of planning, organization and finance. The social and physical symptoms of deficiency are bad housing and poor community services; often complete absence of sanitation; choked-up city traffic; filth, squalor and

disease. Social disorganization and personal maladjustment, gang activity, juvenile delinquency, crime and vice—these are the more conspicuous aspects of urban deficiencies. Large numbers of people remain slum dwellers, failing to become integrated into the urban community and its institutions. Squatter settlements are mushrooming in cities in most parts of the world. In some metropolitan areas, they already include as much as half of the population.

The economic and technological resources needed for the job seem staggering, even for the highly advanced country. But let us consider the size and character of the problem confronting the less industrialized countries. In India, up to 22 billion dollars would be required in a period of twenty-five years, ending in 1975, to house the new inhabitants of the cities with over 100,000 people alone. This is about four times as much as the International Bank for Reconstruction and Development was able to lend all countries for all purposes during its first sixteen years. The provision of city-wide services, utilities and transport would at least double the required investments.

The uncontrolled crescendo of urbanization in most developing countries is becoming urgent internationally, all the more because it is not yet fully recognized by the appropriate government leaders. It is urgent because there is an apparent imbalance of resources which are being applied to urban development programmes in relation to other priorities. Finally the condition is urgent because the organisational method for coping with the on-rush to cities, the squatting and slums, the housing and transport problems, are not satisfactorily established or proven.

The explosive nature of urban growth and the dire poverty in which it typically takes place poses a special problem for social development. Illiterate, unskilled and socially bewildered the rural migrants fill squatter shack-towns and find little work, a bare subsistence and barren opportunities for self-improvement. Economically their role is ineffective. Socially they are nearly a complete burden on the treacherously thin layer of public services. Illegitimacy, disease and crime symbolize the demoralizing social enzymes at work.

Thus an improvident cycle must be broken. The task is not easy. Astute strategies to guide the migration, to control essential steps of settlement, to provide selective assistance must be formed and harmonized to give hope and stimulus to the individual, his family and local institutions. New ideas and pioneering experiments are required. The developing countries are confronted with the dilemma of allocating their extremely limited resources, not only for the immediate improvement of

* Based on the statement made by the representative of the Secretary-General before the United Nations Group of Experts on Metropolitan Planning and Development at Stockholm, Sweden, 14 September 1961.

¹ The term "billion" signifies a thousand million.

the social and physical environment, but also for investment in productive projects to achieve long-run social and economic gains. The fact is that more people now live in urban areas than can be supported by present productivity. Urbanization is outpacing industrialization. To try to repair present social ills at the expense of increasing industrial and agricultural productivity would doom the population to decades of low levels of living. It is, of course, difficult to resist the dire needs of the population. Yet, some investment of social capital such as this may be quite essential to achieving increased productivity.

The principal issue for the developing countries is, therefore, the assessment of the appropriate share of national resources that must be spent for housing and urban development in connexion with and as a basis for industrialization and agricultural development. Public action in this field was originally regarded as unproductive expenditure necessitated only by humanitarian considerations. But it is now recognized that housing and urban development are important for the stability of labour and for productivity of industry in urban society.

At least three factors make it unnecessary for the developing countries to duplicate the mistakes of the industrialized countries:

(1) A wealth of information and experience is being gathered by scientists and practitioners in urban affairs throughout the world;

(2) Modern technology and science offer a wider range of possibilities for the distribution of people and settlements, and for raising levels of living;

(3) At present there exists a definite public responsibility for physical, economic and social development.

Formulation of broad development concepts and a varying degree of economic programming have become functions of government in practically all countries since World War II. In a growing number of cases health, education, housing, and social welfare have also become important components of national development. However, the changes in the physical environment which such plans impose have been only rarely considered to be an equally significant part of development. But unless all these changes are anticipated and planned for at the same time, the full measure of social gain may not materialize at all, and economic goals may themselves be highly jeopardized.

There is a rapidly growing recognition that professional disciplines working independently are not sufficient to bring about balanced optimum national development. Comprehensive approaches are necessary, and these must be integrated about major development fronts. Urban development is certainly one of these, and urban physical planning represents a prerequisite to the fullest economic and social progress.

Another front presenting renewal opportunities to co-ordinate development activities is the region. Planning

on a regional scale may help guide both urbanization and industrialization, that is, provide a common meeting ground for linking local physical planning and national economic planning, as well as the planning for social services and community development. However, we must recognize that our administrative machinery is still woefully inadequate to bring about the level of integrated planning and action which is required.

In the process of accelerated urbanization large sections of agricultural land are being, and increasingly will be, transferred from agriculture to industry, and to other urban uses. There is, consequently, an urgent need for national land policies which can help guide this transition into desired channels. The physical planner's role in this crucial period is an extremely essential one. Through appropriate land-use planning, it is his job to help this transfer of land to occur in an orderly fashion by reconciling the rights of the individual with the interests of the community. In addition, by operating on the regional rather than the local scale of planning, the planner can help to obtain a desirable balance in the urban/rural relationship. We will, however, have to add new work tools to planning, in addition to zoning, building codes and subdivision regulations, to achieve efficient location of industry and commerce; the development of transport, power, and utilities; and suitable arrangements for public administration on a regional rather than local scale.

A number of general conclusions seem to be emerging:

(1) The increasing rate of population growth will be accompanied by a progressively higher rate of urbanization;

(2) Our world society must learn to guide the process of urbanization through judicious regional development of industry and agriculture;

(3) Rural economic development must be accompanied by intensive programmes of social and physical development, thus extending the benefits of an urban way of life to all.

No one pretends that the rural/urban migration can be reversed. The question is how developing nations can acknowledge this shift of population and utilize it as an instrument of progress. In all countries there is a need to take full advantage of new technology in transport and communications, in services and utilities, and in construction to rejuvenate the cities, to return to them the benefits of nature, and to reduce the daily chore of urban travel. Where adequate techniques do not exist, new ones must be developed, not by building bigger installations, but by new departures: faster rapid transit connecting the essential centres of a metropolitan region; abandonment, if necessary, of homes in their present form and creation of their contemporary counterparts in taller buildings covering less ground to return efficiency, beauty and sanity to our cities. Action cannot wait because the cities in our time must progress as they grow, for malformed cities may bring about a wider social paralysis. This is the challenge.

PREFACE

The papers presented in this publication focus upon one of the most important phenomena of our times: the radical transformation of man's pattern of habitation on earth. The transformation is not only physical and economic, but social and cultural, and involves a shift even in men's emotional outlook on life. The question therefore challenges the broad range of man's wisdom, and especially his ability to increase his wisdom from clear perception and understanding of his experience. It is therefore appropriate that the papers are drawn from many fields and many viewpoints; from countries of the East and the West; from highly developed and less developed lands.

A major feature of this transformation—urbanization—consists of the massive congregation of men into new and complex interdependencies in which even the most elemental forms of human behaviour and interpersonal relations are recast according to the requirements of the new level of interdependence. To survive, an inherited social tradition seems to require a new rationalization and a conscious integration into the physical and institutional scheme of things.

This transformation is, of course, a part of the world-wide process of economic and social development. But, more accurately, it is part of the struggle for development, because the results are often of questionable benefit to men. Contemporary urbanization is hopeful but vexing, dynamic but to some even stupefying. Many current problems of cities arise not only from a lack of development but an imbalance of development, or perhaps from a premature anticipation of the benefits of development. Large segments of every society suffer because changes bring abrupt demands to them that they are little prepared to meet.

The immediate challenge for the planning of cities is to make the processes of change which occur with development as constructive as possible. This will require broad ranging strategies and well co-ordinated tactics. But as yet it is questionable whether even the appropriate levels of attention and resources are being applied to the formation of cities and their regional patterns. The United Nations has called for emergency action in housing and urban development (General Assembly resolution 1917 (XVIII)). Almost every contributor to this publication refers to the growing severity

of the problems which must be faced with wisdom and resolution.

The papers included here offer evocative definitions of the technical and human problems of urban development, and present a broad review of existing programmes of action. They were given at two meetings under the auspices of the United Nations Housing, Building and Planning Branch (now the Centre for Housing, Building and Planning). The first meeting was devoted to the chief form and symbol of the transformation, the metropolis. The meeting of the Group of Experts on Metropolitan Planning and Development, which met in Stockholm from 14 to 30 September 1961, was organized jointly with the Government of Sweden and in co-operation with the International Labour Organisation, the United Nations Educational, Scientific and Cultural Organization and the World Health Organization. The papers presented to the Group of Experts at Stockholm were written in 1961. While generally the concepts are equally valid today, the reader must keep in mind that specific cases and data were those available that year.

One of the more promising devices for channeling urban growth into its most efficient and beneficial forms—new towns—was the subject of the second meeting. The Symposium on the Planning and Development of New Towns was organized jointly with the Government of the Soviet Union in collaboration with the same United Nations agencies which supported the meeting in Stockholm. It met in Moscow from 24 August to 7 September 1964. The results of both meetings are presented here in the introductory section on recommendations and conclusions, and in part Two, The Development Problem. Details on the papers and attendance at the two meetings are given in the annexes. Other meetings on the same subject have previously tackled various aspects of man's transforming habitat.¹

Another meeting on Planning for Urban and Regional Development including Metropolitan Areas, New Towns and Land Policies was held at Nagoya, Japan, from 10 to 20 October 1966. The papers from this meeting may be expected to be published in the near future.

¹ See *Regional Planning* (United Nations publication, Sales No.: 59.IV.7); *Report of the Ad Hoc Group of Experts on Housing and Urban Development* (United Nations publication, Sales No.: 63.IV.1); *The Physical Planning of Industrial Estates* (United Nations publication, Sales No.: 62.II.B.4).

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Front cover: Stockholm, Sweden

Back cover: Milan, Italy, in 1912 (black) and in 1934 (red)
(courtesy: *Urbanistica*)

I. UNITED NATIONS GROUP OF EXPERTS ON METROPOLITAN PLANNING AND DEVELOPMENT

Conclusions and recommendations

The possible lines of action for improving planning for metropolitan area development, as suggested by the Group of Experts, fall into three main categories: measures recommended for governmental action at the central and local levels; recommendations concerning potential contributions by institutions of higher learning and research centres, by professional organizations, both national and international, and by citizens groups; and various ways by which national efforts can be supported by international and inter-governmental organizations.

At the outset, it should be pointed out that none of these activities will either arrest metropolitan growth or in any sense "solve" all the problems accompanying metropolitan development. Metropolitan growth is a continuing process which may be expected to proceed at a progressively higher rate in the foreseeable future. Although much can be done through international action to encourage and assist adequate planning for metropolitan government, nevertheless, primary responsibility in this regard rests within each country, with its national, intermediate and local government authorities. If adequately organized and equipped to deal with the problems of planning for metropolitan development, governments and the peoples concerned will be better able to understand the present and emerging problems, to determine and evaluate possible choices, to decide upon courses of action and, resolutely, to take the action indicated. But if metropolitan growth continues amidst a welter of government authorities which are not organized to deal with it either functionally or jurisdictionally; and if means are not available for placing the needs of the metropolitan area as a territorial unit in their proper context and for dealing with them in an integrated fashion, then even the best intentioned efforts and the most eloquent exhortations are likely to be of limited use.

Some of the recommendations made by the Group refer to matters of policy and others to administrative questions. The Group was aware that all the recommendations made may not be applicable in every country. Some recommendations are designed to arrest the flow of migration to metropolitan areas, and others to stimulate urban growth and, therefore, appeal more to developing countries. It is, of course, the responsibility of the people concerned and their Governments to appraise the methods and approaches suggested in the light of their requirements. For these reasons the

following suggestions were made by the Group for consideration, as appropriate, by both the industrialized and the developing countries.

THE NATIONAL RESPONSIBILITY

In view of the important role of central and local governments in the planning, organization, financing and execution of urban development programmes, and recognizing that institutional arrangements made at the national level to deal with problems of urbanization and metropolitan planning and development are often insufficient, the Group endorsed the resolution 830 B (XXXII) of the Economic and Social Council including the regional economic commissions and the specialized agencies concerned, consider the formulation of a national policy on metropolitan planning and development, and the designation of appropriate organizations as national centres for dealing with such questions, in particular the following:

- (a) Evaluating the existing programmes on urbanization and metropolitan growth;
- (b) Recommending appropriate action programmes;
- (c) Providing extension or advisory services;
- (d) Promoting the training of technical and administrative personnel required;
- (e) Organizing, undertaking or sponsoring research and surveys covering different aspects of urbanization and metropolitan planning and development; and
- (f) Serving as clearing houses for information concerning practical experience and research on these subjects.

The Group emphasized that physical considerations must be recognized in establishing national policies, programmes and budgets for regional and urban development. Depending on circumstances, such recognition may take the form of simple, centrally prepared projections of demographic and economic indicators; it may take the form of goals for given regions, elaborated as appropriate in varying degrees. Some countries, especially those relying heavily on public investment in their development programmes, may wish to consider the use of devices to assist in the geographical as well as the functional evaluation and communication of proposed expenditures.

To ensure adequate consideration of the physical aspects of national development, attention should be

given to the desirability of establishing at an appropriate place within the national government a permanent central unit concerned with over-all physical planning. Such a unit might carry on a variety of functions, among which the following may be mentioned:

(a) Preparation of national physical development guidelines and plans;

(b) Encouragement of the establishment of research and planning units in all principal departments and agencies, to further the principle of co-operation among these units at all stages of the planning process;

(c) Review and furtherance of necessary integration among the several departmental and agency development plans; such as, preparation and distribution of manuals to the government departments and agencies concerned, indicating methods of preparing master plans and the items which should be included; and

(d) Advice and assistance in the preparation of national and (if appropriate) regional capital budgets.

In smaller countries the central physical planning unit might be sufficient to deal with the national development programmes which apply to metropolitan areas and to regions in which such areas are situated. In larger countries, however, it may be desirable to make appropriate organizational arrangements, either within the central planning unit or separately, to deal with the metropolitan area and other urban aspects of the national development programme; and in general to co-ordinate those national activities which affect metropolitan area development, such as the following:

(a) Dissemination of information helpful in metropolitan planning and development;

(b) Co-ordination of financial and technical assistance from various agencies for metropolitan planning and development; study of the need for additional grants; clarification of conditions for grants stressing the need for integrated planning;

(c) Review of the impact of various agency programmes on urban and metropolitan development and the mutual relationships and effects of these programmes on each other;

(d) Study of intergovernmental relations with respect to metropolitan areas, and maintenance of a clearing house of information about legislation affecting urban planning and the development, organization and progress of planning in metropolitan areas;

(e) Assurance of adequate participation of the national government in local and metropolitan advisory and policy boards and technical commissions;

(f) Provision of fellowships for training of planners, and establishment of training programmes.

A number of countries have come to feel that over-concentration of the population and of economic activity in one, or in a few, major urban areas is undesirable for the nation from the economic as well as from the social point of view. They have sought by various policies to level the development between regions, between large and small cities, and between towns and

rural areas. This can mainly be achieved by controlling the location of industry and other economic activities. Two principal approaches have been used:

(a) Strict regulation of the location and development of industry according to economic plans; and

(b) Prohibition of location or further growth of industrial development in certain areas.

In some countries with mixed economies, measures have been introduced to encourage decentralization of industry by means of financial assistance, provision of land and services at low rates and by taxation policy. It is recommended that governments undertake the preparation of nation-wide studies on the location of industries in order that metropolitan growth can be planned on a sound economic basis. Governments should also consider administrative control and positive assistance which would provide a balance between economic and social development within the region.

It is also desirable for governments to formulate a national transportation and industrial power policy covering all forms of transportation and interrelationships among them, and within this framework should be developed an over-all metropolitan transportation policy.

The Group called attention to the fact that, especially in the less developed regions, development cannot be started effectively by the local authorities because of their lack of experience, vision, resources and technical know-how. In such situations, only a central national authority can take the initial steps which would lead to a more balanced distribution of the national, social and economic development for the optimum use of national resources.

Governments should give consideration to the following recommendations relating to the health aspects of metropolitan planning and development:

(a) National health policy should give special attention to the problems created by metropolitan growth with its overcrowding, poor housing and poor sanitary conditions, deficient nutrition and high physical and mental strain on a large percentage of the population;

(b) Participation of health administrators and technicians in physical and general planning for urban and metropolitan areas from the earliest stages of such planning;

(c) Adequate representation of the health administration in the department of ministry in charge of planning and development policies for the metropolitan area, in order to include health and sanitation specialists in planning and development boards;

(d) Adequate financing of health services as part of the capital investment policy of the metropolitan area and the country as a whole;

(e) Co-ordination of health services with those of other departments in the urban and peripheral areas;

(f) Need for further research on the health and social aspects of urbanization, with particular regard to the problems of migrants;

(g) Development of a balanced health policy for urban and rural areas;

(h) Training of health and sanitation specialists in the planning and organization of health services for urban and metropolitan areas.

In view of the rising needs of urban population in the supply of clean water and fresh food (such as vegetables and milk), and the huge increase of leisure time and mobility of the metropolitan population, and as a measure for controlling city-climate and creating enduring features and elements in the everchanging-metropolitan environment, the designation of open spaces within the metropolitan region as landscape areas should be considered a functional requirement of primary importance. The reservation of undefined "green areas," and patches or strips of land which cannot be utilized for other purposes is, in most cases, an insufficient measure for meeting these requirements. Regional landscape planning on a functional basis should, therefore, become an integral part of comprehensive planning for metropolitan regions.

The Group urged Governments, especially those of developing countries, to assess, through comprehensive planning, the foreseeable personnel requirements for the administration of services in metropolitan areas and to take such steps as the following to meet these requirements:

(a) Ensuring, through a unified local government service or some similar measure, that salary levels and other conditions of local government service are comparable with those of the national service and other organizations in the area;

(b) Establishing in-service training programmes for local government personnel;

(c) Giving courses in the special character of metropolitan problems in universities, institutes of public administration and other technical and professional schools;

(d) Utilizing fellowships available through the United Nations and other sources for advanced education and training abroad of present and prospective municipal personnel; and

(e) Drawing upon international technical assistance to the extent necessary and available not only for advisers but also for operational and executive personnel—the latter now obtainable through the United Nations.

Statistical and other information concerning the economic, social and physical structure of a metropolitan area and its probable evolution is clearly essential for comprehensive planning. Although considerable experience has already been gained in the technique of carrying out such research and investigations, all countries have much to learn from each other and from further research. It was appreciated that the relatively less industrialized countries, in particular, need to develop their statistical and research services and consequently augment the supply of trained personnel for this purpose. However, the lack of such adequate services should not preclude a programme of immediate action with regard to

metropolitan planning and development. It should be possible at the outset to prepare some preliminary plans, at least in schematic form, outlining the more urgent objectives, it being understood that these would be periodically reviewed and revised as the statistical and research services improve and more precise data and information became available.

National Governments with experience in special aspects of metropolitan planning—such as the development of new and satellite towns for the decentralization of metropolitan population, advance acquisition of land for metropolitan growth, co-ordination of transportation networks, development of "fringe" areas of metropolitan cities for the resettlement of "squatters"—should consider providing facilities, such as by giving priority in their bilateral assistance programmes, to enable suitably qualified nationals of other countries to benefit by their experience.

In some countries metropolitan development is directly related to regions which go beyond national boundaries. Co-operation between such countries should be encouraged as a measure of improving the planning of such regions.

THE LOCAL LEVEL

The Group noted that planning activity at the local level should be on an area-wide basis; it should take into account all relevant economic, social and physical aspects of the development of the area of which the local community is a part; it should emphasize the integration of programmes carried out in the area by the government services at all levels; it should provide for continuity in planning operations and for periodical evaluation and revision of plans where necessary; it should be realistic in terms of existing and foreseeable resources. Planning agencies should also keep in touch with the scientific and practical developments in the planning and related fields, utilizing them in their work wherever feasible. In line with these considerations, the Group of Experts made the following specific recommendations:

(a) In each metropolitan area, there should be a permanent, area-wide planning agency, with a staff and budget sufficient for the adequate discharge of its duties;

(b) Where a metropolitan government exists, or there is a body to which general functions of area-wide significance have been assigned, the planning agency may be attached to it. Otherwise, the agency should be established and supported by joint action of the principal jurisdictions in the area;

(c) In the organization and operation of such planning agencies, the following should also be considered:

(i) Establishment of a technical planning advisory committee, which would assist in laying out and overseeing the general work programme of the agency. Such a committee could include competent persons drawn from such sources as universities, as well as technicians from the co-operating agencies;

(ii) Provisions for the training and professional advancement of the planning and servicing staffs through such measures as agency libraries, membership in professional societies, attendance at professional meetings, and granting of leaves of absence and financial assistance for further education;

(iii) The establishment of standing or *ad hoc* technical committees with the co-operation of outside sources in appropriate areas of the work programme, such as for industrial location, local economic development, urban transport, social services, recreation, etc.

CITIZENS' AND PROFESSIONAL GROUPS, UNIVERSITIES AND RESEARCH CENTRES

It was felt that citizens' and professional groups, universities and research centres, and interested but independent bodies could be of considerable assistance to planning and development agencies in many ways, particularly in helping the formulation of development goals and in the choice of alternative solutions to various problems of metropolitan areas from the technological, economic and social points of view. The Group therefore recommended the following steps:

(a) The carrying out of private studies of significant planning problems in the area, with suitable publications of the results, and/or transmission of such studies to the responsible public bodies;

(b) The review of plans and proposals made by the planning agency;

(c) The appearance at public hearings if and when conducted by the planning agency, or by legislative, executive or other planning agency;

(d) The carrying out of a programme of education and information about planning in general and about specific plans and proposals, and the fostering of neighbourhood improvement.

In view of the importance of continuous study and research in the growing problems of metropolitan areas, the attention of universities should be drawn to the desirability of taking active steps in this direction. Architecture and civil engineering should have an important place in university curricula. Besides learning the theories, attempts should be made to study the practical applications of each subject.

The integration of some of these subjects into the practical problems of metropolitan growth at the university level would provide advanced students with subjects for specialization leading to research. Team work among selected students might be organized to undertake specific problems of research. The interest thus created in the younger generation and the training in these problems imparted would undoubtedly prove valuable in the task of finding solutions for problems, and in training personnel for action in the field of metropolitan planning and development.

Universities, particularly in the less developed countries, may find it difficult to carry out this suggestion. In such cases, special research institutions could be

established and endowed for the specific purpose of training and research in the problems of metropolitan planning. Such institutions could work in co-operation with the universities and with the government departments concerned with these problems on national as well as local levels.

INTERNATIONAL CO-OPERATION

There appears to be considerable scope for extending and developing international co-operation in this field. The Group of Experts considered that its meeting constituted a useful step in this direction. A practical follow-up would be to organize more systematically, with the help of the regional commissions of the United Nations, an exchange of information and experience on national policies pursued, measures taken and results achieved regarding the regulation of metropolitan development, urban land use and the supply of reasonably priced land for metropolitan development. In addition, the Group of Experts identified some fields of study, which in view of the existing lack of information would benefit by comparative studies; these suggested fields of study include, for example: the economics of metropolitan development and especially locational factors in distribution of industry, and other activities which should be considered when formulating a policy of decentralization. The Group of Experts particularly emphasized the importance of expanding technical assistance in various forms to the developing countries, for example: the formulation of policies; the preparation and execution of development schemes; the establishment of research programmes; training of specialized personnel. Accordingly, the Group made the following recommendations for international co-operation.

(a) The United Nations and its regional commissions and the specialized agencies have carried out extensive periodic analytical work throughout the world in various aspects of metropolitan planning and development. Thus, they are in a position to assist Governments with information and advice on metropolitan problems, especially with regard to international developments which may have significant general or localized impact within certain countries. The use of this information should be encouraged;

(b) Many less developed countries of the world require guidance in comprehensive planning and development, as envisaged in this report. Certain aspects of technical assistance by the United Nations and the specialized agencies need to be strengthened. Among the activities requiring special attention are surveys of metropolitan planning and development; town and regional planning legislation; techniques for metropolitan planning, research in economic, social and administrative factors affecting metropolitan growth and development; training of planners and technicians of the various administrations and services concerned with metropolitan problems. It is felt that many of the above activities require a co-ordinated, interdisciplinary approach. It is therefore recommended that, wherever possible, the international organizations, when providing technical

assistance for metropolitan planning and development, should undertake projects jointly;

(c) Encouragement should be given to carrying out scientific and technical investigations through comparative studies leading to the improvement of planning knowledge and techniques, particularly (although not exclusively) as they relate to metropolitan areas and their problems. Efforts should also be continued and expanded in the distribution of publications and convening conferences in various regions of the world;

(d) The United Nations should be invited to consider organizing a meeting of experts, on an international basis, to undertake a comparative study of methods of dealing with the problems of "squatters' settlements" in metropolitan areas;

(e) In view of the shortage of trained planning personnel, efforts to increase the supply should be continued and expanded through training centres, regional seminars, fellowships and exchange programmes and in other suitable ways;

(f) To assist Governments faced by a shortage of planning personnel, simplified planning guides should be prepared, laying the groundwork for metropolitan planning while the needed personnel is receiving training;

(g) The Group noted resolution 830 B (XXXII) of the Economic and Social Council regarding the establishment of national centres for dealing with questions of urbanization, and recommended that the United Nations, including the regional economic commissions, and the Specialized Agencies concerned take steps to strengthen their work on various aspects of urbanization and metropolitan and regional planning and development and to make the necessary provisions for full participation in the concerted programme of international action in these fields, particularly in the establishment and organization and for the exchange of experiences among States. The Group considered that, for the implementation of this resolution, additional staff might have to be provided to the appropriate unit of the United Nations. In this connexion, the Group noted that resolution 830 J (XXXII) of the Economic and Social Council on the strengthening of the work of the United Nations in the social field, adopted by the Economic and Social Council at its thirty-second session, and accordingly urges that sympathetic consideration be given by the appropriate authorities of the United Nations and regional commissions to the need for strengthening the existing staff and making adequate provision for any additional staff necessary for the implementation of the recommendations of the Group;

(h) A considerable fund may be required for the studies, surveys and investigations which must precede capital investment programmes for metropolitan development. As funds for such pre-investment activities, as well as in the necessary investment projects themselves may be difficult for many less developed countries to provide because of other essential investment needs, it is

recommended that the United Nations Special Fund, the International Bank for Reconstruction and Development and other international financing agencies give favourable consideration to the applications of governments for financial assistance for such pre-investment studies, surveys and investigations, and for investment in communal works as an essential part of creating the urban infrastructure required for industrial development;

(i) Many problems of metropolitan areas are specialized, and require technical skills and understanding which can only be acquired by intensive work in such areas. For that reason, the Group strongly supported the initiative shown by various international professional organizations, such as the IFHP, IUA and SIAP,¹ in research and training activities. The Group also supported the meetings organized by the International Union of Local Authorities to establish an inter-municipal technical service to enable co-operating countries to obtain, for periods up to six months, the advisory services of qualified personnel employed by cities in other countries. The Group urged the United Nations and the specialized agencies, non-governmental bodies including foundations, and governments to co-operate in furthering this important programme;

(j) It is suggested that priority be given to the comparative study of metropolitan area administration which is included in the programme of work approved by the United Nations Economic and Social Council. Such a study should provide insight into (1) methods of classifying metropolitan areas, which will facilitate the exchange of information between countries with common administration problems; (2) methods of reconciling the requirements of multifunctional regions for purposes of planning with the requirements for administration of certain functions such as water supply and transportation and with the requirements of different levels of government—including local authorities—responsible for administration of important functions within the region; (3) methods of administrative decentralization within big cities; (4) the special problems of administration associated with rapid growth of capital cities; and (5) other administrative aspects of metropolitan growth;

(k) The United Nations should be invited to consider the possibility of holding a seminar on an inter-regional basis to discuss questions relating to the planning and development of satellite and new towns. In this connexion, a project for the preparation of a study of problems arising as a consequence of building new capital cities is included in the programme of work for 1961-1963 adopted by the Social Commission at its thirteenth session and endorsed by the Economic and Social Council at its thirty-second session in resolution 830 L (XXXII).

¹ IFHP (International Federation for Housing and Planning), IUA (International Union of Architects), SIAP (Inter-American Planning Society).

II. UNITED NATIONS SYMPOSIUM ON THE PLANNING AND DEVELOPMENT OF NEW TOWNS

*Main conclusions and recommendations**

NATIONAL AND REGIONAL POLICIES FOR ESTABLISHMENT OF NEW TOWNS

Urbanization is accentuated by population growth, the movement of population away from rural areas and industrialization. This massive urbanization, especially if unplanned and uncontrolled, is likely to generate increasingly serious economic, social and health problems in most parts of the world.

A new town must be considered as one element in a co-ordinated scheme of regional and national planning, not as an isolated exercise in physical planning. A new town must serve as an instrument of national policy for urban and regional development in a federal state. In the absence of a national plan, there should be a new towns policy in regional, state or provincial development plans.

New towns, whether close to or distant from the metropolitan areas, will not of themselves prevent growth of the metropolis. New towns may, however, help to minimize congestion within the metropolitan areas and may also reduce the rate of growth of the giant metropolises.

Comprehensive national and regional planning should include the planning and building of new towns to promote economic development. Such towns would accommodate new activities and could encourage and reinforce the incentives for such development, especially in the less developed or depressed regions of a country. New towns should be planned in relation to their region and integrated into a comprehensive regional plan.

A diversified economic base is imperative in new towns of all types, whether these are new towns built to decongest metropolitan areas or as new capital cities. Measures to diversify the economic, and especially the industrial, base of such towns should be part of the plan from the earliest stages.

PLANNING AND CONSTRUCTION OF NEW TOWNS

The goal of town planning is the creation of the most favourable conditions of life for all the population. The new town must therefore be founded upon sound principles of design and economics.

Planning, building and architecture in a new town should ensure a favourable microclimate, good drainage conditions, suitable subsoil to facilitate the most rational distribution of both the population and the buildings envisaged and the future expansion of the settlement.

The locations of such major elements as mining and manufacturing industries, power generators, transportation centres, universities and scientific institutions are among the reasons for creating new towns. The location, expansion and auxiliary facilities of these elements must be harmoniously related to the new town's other land uses.

The basic elements of the town plan include residential, industrial, recreational and park areas, which should be harmoniously blended and related by a transportation system with adequate land reserved for the future expansion of these uses.

The layout of new towns is greatly affected by the location and organization of the industrial sites. Compatible industrial enterprises should be grouped together. Furthermore, industries which do not emit offensive smells, smoke or noise should be sited as close as possible to the residential areas but arranged so that industrial traffic cannot invade the residential areas.

There appears to be substantial agreement among town planners that housing and local facilities must be provided in the same place and at the same time. Neighbourhood planning not only provides a convenient framework for the distribution of essential local services, such as shopping, primary schools, health, social and community needs, but offers as well the best starting points for community development. It is therefore a social as well as a planning concept.

The neighbourhood unit and the residential district should be the basic scales for new town planning. Within their boundaries, the neighbourhood and districts should incorporate a variety of design with respect to layout and dwellings.

An active and clearly established town centre should be established. It should have an obvious outlet in its direction of growth rather than be surrounded by a belt of unused land.

The convenient location and appropriate design of different types of public open space to meet the needs of different sectors of the population are more important than the maintenance of theoretical standards of acreage of open space per 1,000 people.

* These conclusions and recommendations are based on the findings of the Symposium and were prepared by the Secretariat. See *Report of the United Nations Symposium on the Planning and Development of New Towns* (United Nations publication, Sales No.: 66.IV.3).

In most, and perhaps in all, new towns, there should be planned emphasis upon the use of public transport. There should be adequate provision for the use of private automobiles for exceptional journeys and for family recreation. As standards of living rise, it is almost inevitable that drastic measures must be taken to prevent over-congestion of private cars in important areas of cities and towns.

Appropriate centres to train sufficient numbers of technical personnel should be created or enlarged if the goals of the new towns are to be attained. An immediate programme is needed in most countries for the training of town planners, architects and engineers.

The industrialization of building should be sought wherever large-scale operations, such as construction of a new town, are undertaken. Furthermore, a long-range housing programme can be effective only when the central and local agencies which deal with construction have the authority to set policy on standardization and modular co-ordination and can provide the necessary funds for the development of the construction industries.

The application of progressive ideas to the construction of new towns calls for extensive scientific research into new avenues of development and all-round experimental testing of new approaches. Prior to the building of a new town it is prudent, therefore, to test the newly introduced and proposed types of houses, flats and public buildings on experimental sites. To this end, it is useful to organize a comprehensive pooling of experience of all countries in this field.

In conditions of severe shortage of skilled personnel and building materials or of urgency caused by a sudden influx of immigrants, priority in construction should be given to community structures, and temporary buildings should be used for housing. Roads and utilities, however, should be so planned in these instances as to be usable for the long-range development of the area. Steps should also be taken to ensure that the temporary housing is replaced as soon as the economy has become consolidated and the building industry developed.

The supply of potable water for each dwelling unit or for each courtyard is a first priority. The water supply should be available at all times and in such quantities as will provide for all the personal household, commercial and industrial uses in the new community.

At all stages of planning, there should be co-ordination of the scheme for sewage collection and disposal, the soil survey of the new town area and the plan for land use. The land use controls should be co-ordinated with the local sanitary regulations. Health authorities should take special measures for areas where land development is likely to precede the construction of a permanent sewer system.

SOCIAL ASPECTS OF NEW TOWNS

There should be diversity of housing types and choice between rental and co-operative or individual ownership.

Adequate social services should be available from the start to provide for the social well-being of the new

town's population, in particular schools, primary shopping centres, a medical centre and public meeting places.

Minimum standards should be established for each (country) region, to be revised upward subsequently as resources increase. Such standards should recognize the need to phase or stage facilities and services for health, recreation and culture.

The building of temporary huts for construction workers should be avoided so that these makeshift dwellings do not become the new town's future slums. Shelter for construction workers can be planned for conversion to other uses in the established town.

In a new town where housing is built initially by industries for their workers, housing should not be tied to the job, so as not to force eviction upon retirement or change of job as the community grows.

These recommendations should enable the new towns to become the focal points in the development of their regions and thereby provide an opportunity for experimentation in the art of town building to achieve the social progress required in a changing and rapidly industrializing society.

ADMINISTRATION OF NEW TOWNS

Town and country planning must be integrated with economic and social planning. Unless physical planning and processes are effectively integrated with economic planning and processes, it may not be possible to ensure the provision of a minimum desirable physical environment for human needs and welfare. Simple co-ordination of physical planning with economic and social planning will not achieve the desired objectives.

Developing countries will generally benefit by the creation of a physical planning division or department within their national planning organizations.

The development authority has been the most satisfactory instrument for the creation of a new town, since existing local governments seldom possess the special qualifications and capacity required.

Since the inhabitants of a new town do not control the development authority, the machinery of local government should be established as quickly as possible in those towns where it does not already exist. The mayor or council should be made a member of the development authority's governing board, in order to give expression to the views of the residents. Where large cities have the responsibility for new town development, the residents of new towns should be provided with some form of local government in the earliest stages.

The development agency and later the municipal council should have jurisdiction over an area large enough to provide for future development, including sufficient land for a wide green belt as a protective shield against encroachment by uncontrolled developers or by squatters.

As the initial master plan of the new town nears fulfilment, the development authority should hand over

its responsibilities and divest itself of its property by stages to other public bodies, thereby preparing for its own liquidation.

Community development should be undertaken from the beginning, both in planning and in implementation, and adequate specialized personnel, including a social affairs officer, should be associated with the new town from the start.

Preservation of public ownership of land in new towns is so important that it should be departed from only when there is no alternative. The control of commercial land especially should be retained in the public ownership. It should not become the subject of speculation, and the increment resulting from population growth should be captured for the public benefit.

In countries with free or mixed economies where public acquisition of the new town site may not be feasible, it may be necessary to consider such devices as freezing land values within the area of the new town, or imposing taxation that will enforce land use in accordance with the plan, or by public acquisition of the site.

SPECIAL PROBLEMS OF NEW CAPITAL CITIES

The creation of new capital cities will receive further serious consideration as new nations take their place in the world community and as other nations seek territorial consolidation within the framework of national development as a solution to their political and economic problems.

The selection of the site for the new capital city is of great importance for the development of the country as a whole as well as to the region where it will have an integrating force.

The location of a new capital or the choice of an existing city as a capital should be calculated to facilitate the exercise by the capital city of important economic, political, administrative, social and cultural functions, and to avoid a "one-industry" city exclusively devoted to administration.

The capital city should preferably be established on the basis of a comprehensive national plan, even if only a preliminary outline plan, as a guide for future development of the country, giving consideration to the effects of its creation on the development of the region.

The transfer of the national capital to a new site need not necessarily involve the creation of a new city. Many countries may find it politically, socially and economically expedient to enlarge an existing city.

The administrative, economic and political functions of a capital city should be supplemented by a diversified industrial and commercial base which could ensure a variety of employment for its population.

Measures should be undertaken to ensure the control of land by the public bodies in order to facilitate the construction of a new capital city or redevelopment of an existing town to a capital city. Control of land ownership by public bodies should be extended to key areas of influence in the region, and strong measures should be provided to control those sectors not under public ownership.

Part one
URBANIZATION

THE PROCESSES OF WORLD URBANIZATION*

BARBARA WARD

THE URBAN CONTEXT

There are certain contexts in which the division between developed and developing countries does not seem to be the most significant. All the world's peoples are undergoing, at a speed which spills out crisis after crisis as it roars along, the transformation of their lives by science and technology. In nearly all lands, population, continues to increase. Everywhere, without exception, the growth of populations in towns is greater than the average rate of expansion. If the world's general rate of growth is about 2 per cent a year, towns are growing by 4 per cent a year, some big cities by 5 and 6 per cent a year, some even by 8 per cent a year.

This unprecedented speed entails an almost fantastic scale of new building, as much in the next three or four decades as in the whole previous history of man. It is not simply a question of a vast new flood of migrants. Housing deteriorates and older communities have daunting problems of replacing completely outworn and dilapidated stock. To give only one instance, the United Arab Republic authorities estimate that of their 95,000 dwellings they should build each year, 64,000 are for new arrivals, 16,000 to house the currently unsheltered and 15,000 for dwellings falling into decay. Between the need to build new settlements and to catch up on the past, developed lands may well be under not much less pressure than the developing, California not much less challenged than, say, the Damodar Valley.

And in developed as in developing lands, most of the social pre-conditions of human happiness in urban communities are at stake. The misery of families in a run-down location in Glasgow or Chicago springs from many of the same elements of dirt, overcrowding, crime and claustrophobia as in the *barriados* or *favellas* of Latin America. For this reason, at a recent meeting of men and women interested in the urban challenge—the Delos Symposium—the opinion was unanimously expressed that urbanism followed close on the heels of atomic weapons and food supplies as the profoundest challenge to the survival of a truly human community.

There is thus a case for considering breakneck urbanization as a common experience of the human race, a world-wide by-product of our accelerating revolution

of technological change. It is therefore one of the areas of social research and experiment in which it is surely better to look at the whole spectrum of city-making from the densest and wealthiest down to the most modest first stirrings of urban expansion rather than to isolate the urbanism of developing countries from the more elaborate problems of developed areas.

Such an approach gives the developing countries some sense of where their cities are likely to go and although it must be said that developed cities today look more like warnings than examples, to know what not to do can be as helpful as to be offered a good working model. This is a particularly important factor in the two or three decades to come for, if we take urbanization as a common, progressive human phenomenon, where developed towns are today is where the new settlements are likely to be in forty years time after a massive investment in urban growth. At least, this is a possibility they have to consider. It is, in one sense, their good fortune. Forty years ago, there were few models hinting at the fantastic changes that have come over developed cities in the intervening years. Now the models exist and the cities coming up behind are in a position to judge whether this is what they want and, if they do not want it, to consider the alternatives.

CITIZEN AND CAR

One of the most important single elements in their calculations must be the motor car. It is only in the last few years that opinion in the already developed cities has started to try to come to grips with the fact that in a modern, industrialized community, men want to house not only themselves but their cars as well. In one sense, of course, this is only one facet of the vast increase in artifacts from air conditioners to washing machines with which modern man fills up his living space and unbelievably loads and complicates cities as "machines for living". But the mobility of the car gives it a character apart and the new centaur, the man-car in cities, poses wholly different problems from those involved simply in man migrating to cities on his own.

The cost of building cities into which, as prosperity increases, the motor car cannot be fitted has recently been underlined in the studies undertaken for Britain by Professor Buchanan and his associates. To give only two instances, to redesign a small town like Newbury with a relatively simple network of roads which permits

* Background Paper No. 1 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.

the environment and the amenities of the town to be compatible with the forecast increase in car-users would cost £4.5 million. For a large urban concentration such as Leeds the cost is nearer £90 million. In a new town like Cumbernauld, near Glasgow, on the contrary, the original plan has taken into account the fact that each family in a population of 70,000 may have and use a car. The road network, the movement from residence to work, the development of a car-free central area with underground parking have all in fact added up to a quite new pattern of township and one in which very expensive redesigning of road and environment twenty or thirty years hence should not be necessary.

Those responsible for thinking about new patterns of urban growth cannot evade the question: what will be the future relation between citizens and their cars? It may seem a very premature question in view of the present poverty of most developing peoples. But can we be sure that the motor car will not be one of their first preferred symbols of a better life? Every Western society has steadily turned to the car as its affluence has increased. There does seem to be a genuine enjoyment of mobility in the African reaction to modern transport. All over Asia, ministers and officials give the example of car driving as a symbol of success. One can also argue that the hunger for bicycles in India is already a sign that greater resources would extend the hunger to cars. On the whole the arguments which point to a growing popularity for the private car seem more convincing than those which suggest static preferences.

True, Governments may well decide that the private car is a luxury developing societies cannot afford and take steps to see that few are produced. Certainly the official Soviet reaction has been to stress the greater effectiveness, economy and social desirability of public transport, supplemented in suitable cases by hire-car services. But this possibility does not alter the need for Governments, in thinking about the future of their cities, to decide what line they will take. They may decide that their citizens will not be allowed cars. They may suspect that twenty years from now, with rising affluence, prohibitions on cars will be difficult to sustain. They may therefore decide to prepare for the coming flood of private cars. All these decisions are relevant to the kind of town they plan. But if urbanization is accepted as a single world-wide phenomenon, entailing many of the same problems and consequences, it might be wise to expect the motor car to become fairly irresistible and to devise city plans accommodating private desire but preventing destruction of the civic ideal.

So far, there seem to be no studies of the implications, including costs, involved in designing cities from the start for future road networks suitable to the motor age, but *a priori* one may question whether the difference would be cripplingly great since, as we shall consider in a later section, some of the principles involved in sensible transport planning would seem to be involved in urban lay-out as such. Policies which shorten the journey to work, which relate residential to work areas, and create safe neighbourhoods without disturbance from

through-traffic are presumably needed in any modern plan.

URBAN SPRAWL

If one accepts the fact that urbanization is in some measure a world-wide phenomenon stemming from similar causes and producing similar effects, one has to recognize the present tendency of the world's urban population to be concentrated in growing urban agglomerations. And if no decisions are taken and no efforts made, the trend would also seem to be toward a steady increase in urban and suburban spread. In developed countries, the process is speeded up by the motor car which offers escape from the town centre but then makes return to the centre so congested and complicated that commerce and industry follow it outwards, creating a tide of shops and factories which swamp all intervening open space while the city centre, such as it is, has to be torn up to accommodate returning cars or cars in transit. Nearly 60 per cent of central Los Angeles is, apparently, given over to cars in freeways and parking lots. At this point, it is relevant to remember that Greater Philadelphia with a population of 5 million is already thirty miles wide. The Baltimore-Washington complex extends for sixty miles, Los Angeles for eighty miles. All are still growing.

But the motor car cannot alone be blamed. The big city long preceded it and the spurt of city growth seems to begin in the earliest stages of modern technological transport. London had a million inhabitants by 1800. The reasons seem all to be associated one way or another with economic growth. Commerce and industry require markets. The city provides the means and the markets. Then the growth itself provides more markets and more labour and more enterprises are drawn in to profit by them. Propinquity cheapens services and costs. Pressures on local government produce urban utilities. They attract further migrants with yet more money to invest or labour to sell. The reason why the vast majority of the great cities of the developing world—Calcutta, Shanghai, Rio de Janeiro, Lagos—are seaports is because only the import-export sectors are modernized and the full force of economic expansion fell nowhere else.

Nor is the process simply the consequence of unplanned development, in response to market opportunities. Planned economies in process of rapid development seem to tend towards urban conglomerations on a comparable scale. This fact underlines once again how strong the pressures are that make for expansion in the biggest centres. It is for this reason that many planners, particularly in mixed economies with a strong private sector, question whether urban spread can be prevented, particularly in the early days of growth. At these times, all resources are desperately short, perhaps especially the resource of men able to take effective and sustained administrative and planning decisions, without which any large-scale plan of decentralization will simply degenerate into a stalling operation on the part of the central government. If therefore, the effort is made, so runs the argument, to disperse urban development—which can only mean decentralizing industries to areas

to which the calculations of profit would not have taken them—then economic expansion may be slowed down, the creation of extra resources may lag badly, capital formation be prejudiced and the means of providing better houses and amenities in fact be lessened by a policy supposed to promote them.

The difficulty about this argument is the lack of any really systematic study of what the costs of a variety of urban patterns are likely to be. Different elements in city development vary greatly both in relation to total costs and to local culture and policy. Generalization is very difficult. However, if one takes two studies at each end of the spectrum of urban development, the Indian Ministry of Work's estimate of housing costs on the one hand and on the other studies made by Dr. P. A. Stone in 1959 on costs in new towns in Britain, they both suggest that the cost of housing itself—which is likely to be between 40 per cent and 50 per cent of the total cost of new settlements—is decisively more expensive in large urban concentrations.¹ Dr. Stone suggests that the cost of two-storey houses or flats may be 25 per cent higher in London than in the provinces.²

Moreover, he brings out another element of extra cost. Higher density tends to lead to higher buildings and the moment a construction goes beyond four floors, it is much more costly to build and maintain. To build, say, a twelve-storey block in Inner London is 60 per cent more expensive than a two-storey block. In developing countries, where skills, machines and materials are scarce and very costly, the difference is greater still. All other things being equal, housing in big centres appears to be considerably more expensive than in decentralized settlements. Dr. Stone's conclusions also suggest much lower costs in preparing sites for development. From Britain's experience he puts the costs of clearing, levelling and road and sewerage building on a virgin site at £2,700 per acre, at £4,200 on a site which is already in use, at £8,500 in a city centre.

But all other things are not equal. Costs depend on antecedent government decisions. If the authorities have no controls over land use and no policies for recouping the unearned increment accruing as a result of urban growth and pressure for more land, the cost of creating integrated communities with projects giving low and no-returns—such as low-cost housing, schools, parks and hospitals—will be prohibitive and may not be offset by the stimulus given to the building industry and the economy generally by industrial and commercial building.

This is one uncertainty. Another lies in scale itself. Up to a point concentration cheapens services such as water, sewerage, fire services and so forth. Beyond a point

¹ The Indian calculations give the following comparison—all for a unit or one room with sanitary facilities and a verandah:

	\$ U.S.
In a four-storey tenement at maximum density (Calcutta or Bombay) on an expensive site	1,200-1,500
In a two- or three-storey building on cheaper site	800-1,000
One-storey structure in smaller towns or outer fringes of big cities	500-700
Do-it-yourself building on cheap land	180-300

² See "Financing the construction of new towns" by P. A. Stone, part five of this publication.

—hard to determine—the extension and complication of the services makes them far more expensive than decentralized low-density systems—for instance, septic tanks against central sewerage; concentration helps traffic at first, then frustrates it in congestion. The Poles, according to Professor Gorynski, have made a number of studies suggesting that the optimum size in city scale for urban construction and services lies round about half a million inhabitants.³ At this point, concentration gives its maximum economic benefits, and the disadvantages have not yet set in. Further studies in other countries with different backgrounds could throw further useful light on this possibility.

Nor should one forget the uncertainties of the time scale. One of the daunting features in a new town is the need to spend so much capital at once in the provision of every kind of facility. Once again, Dr. Stone has some interesting calculations based on British experience which confirm the likelihood that the wholly new town will, in the short run at least, imply higher costs.⁴ But against this must be set the possibility that new towns can draw on a labour force still resident in surrounding villages, that medium-sized towns with some existing economic activities and urban services often have a "slack" that can be drawn on in the early stages of expansion, above all, that in very large urban centres, it is illusory to suppose that hundreds of new enterprises and thousands of new workers can, as it were, plug in unnoticed to the existing facilities. Power shortages, absenteeism, epidemics, delinquency—all observable in Asia's vast urban conglomerations—are part of the toll paid for overloading the structure.

However, India's experience does suggest that a middle way is possible. The Government can avoid some of the heavy expense involved in building completely new cities or in overloading megalopolitan areas if it concentrates on expanding selected middle-sized cities. They provide a market and a labour force and are already probably a pole of attraction to the rural surroundings. New industries quickly find a network of customers and suppliers. The towns have traditions of urban self-government. They usually have services which can be somewhat more intensively used before a whole new apparatus is needed. Completely new towns centred, say, on a single large new industry demand more

³ See "Metropolitan planning in Poland", by Julius Gorynski, part four of this publication.

⁴ For each 10,000 inhabitants housed in completely new towns on a mainly two-storey house basis, the general town amenities (over and above housing), neighbourhood amenities and industrial development cost about £2.5 million. Where 10,000 inhabitants are housed in an existing smaller town, the comparable figure seems to be no more than £1 million. Estimates of annual urban costs suggest the same comparison:

ANNUAL COSTS FOR 10,000 PERSONS (EXCLUDING HOUSING) (£,000's)			
Expenses	Neighbourhood in developed town	Extended town	New town
Neighbourhood	41	38	38
Industrial	—	105	105
Other	—	—	122
TOTAL	41	143	265

overheads, diversify more slowly, risk remaining company towns. Naturally, no plan will discriminate completely between the two alternatives since the distribution of energy or raw materials can absolutely dictate a new start. But existing regional centres seem to offer livelier possibilities.

Yet the available information on comparative economic costs still seems very inadequate and its insufficiency is complicated by a further difficulty. How are we to weigh the costs and benefits which it is almost impossible to express in monetary terms? How for instance should one weigh people's preferences—for quiet, for vistas, meeting places, privacy, parks?

Although the argument seems inconclusive to a number of experts, there does seem to be a certain weight of evidence on the side of controlled decentralization. In some developing countries, to let the urban spread simply rip would create urban areas of such massiveness that they would be virtually impossible to administer. If India, for instance, were to follow the Japanese pattern—in which over 16 per cent of the population live in the five largest cities—Bombay might grow to a population of 35 million. This may be the extreme case. Yet other societies suffer from the same extreme pressures of population. Buenos Aires already has 7 million people, Rio de Janeiro nearly 4 million. But staggering increases are occurring around all cities. Of Latin America's 220 million, 45 per cent already live in cities although the industrial growth connected with reasonably affluent urbanism lags far behind. Round every city therefore, the number of slum dwellings rises inexorably. In Lima 120,000 people lived in shanty towns in 1957; in 1964 their number was 450,000. It is estimated that Brazilian cities need to build a new dwelling every two minutes just to keep pace.

In short, any area with a 3 per cent increase in population and existing megalopolitan areas must consider the daunting social and administrative hazards of growth on this scale. They are nearly intolerable even in California where *per capita* income, technical skills and the spread of education are among the highest in the world. It is hard to question the possibility that they could be the recipe for urban collapse in regions with low incomes, inadequate cadres and persisting illiteracy.

A STRATEGY FOR CONTROLLED URBANIZATION

However desirable decentralization may seem, it has to take place against some of the strongest unplanned forces in modern society—the sucking, pulling attractions of megalopolis. Cities are organic things, requiring a strongly nourished economic and social life and to pick sites at random without thought for the veins and arteries of the larger body politic can increase costs and create wholly unsatisfactory communities. A successful strategy of urban control demands therefore an acceptance of fairly detailed planning. Those responsible need a picture first of existing concentrations of people, of the distribution and use of resources, the national lines of communication, the present movements

of migration and the size, character and adaptability of existing settlements. There must follow predictive studies of population growth and movement, of the types and scale of agricultural and industrial production that can be introduced or expanded. On the basis of such studies, a government has a better chance to work out a pattern of urbanization and development for regions which appear to make up what one might call the natural watersheds of human geography.

Control confronts formidable difficulties in execution. In countries with private sectors, there is the challenge of influencing the economic decisions of a wide number of separate interests without holding down economic advance. The need to secure often dilatory planning permission for industrial location in India has been one of the standing grievances of industry for years. Planning suffers even in administratively sophisticated countries from the risk that predictions may be too rigid and actually limit the potential dynamism of growth. It is painfully easy to make faulty predictions. For nearly two decades, Britain has had county plans with a specific pattern of land use. But, the factor of traffic was not taken sufficiently into account, hence the arterial side of the pattern threatens congestion and apoplexy. All these difficulties point to the need of great flexibility in planning and of sustained efforts to keep options open.

In fact, the ideal of decentralization itself should be flexibly approached to deal more realistically with the drag of metropolitan concentration. To return to the British example, not all the powers available to the authorities under the Town and Country Planning Acts, not all the efforts to maintain green belts and halt the steady expansion of urban sprawl have in fact prevented the growth of population in the south east. There is considerable scepticism whether the Government's new efforts to draw investment to the north and to stabilize populations there will be entirely successful. The proposed Channel Tunnel will increase the drag southwards. The outcome may still be a wash of people all over Southern England in communities hovering between the urban and the suburban and swamping out all intervening breathing spaces of open and farming land.

In fact, the whole purpose of healthy decentralization may be defeated if the megalopolitan pressures are not drawn off. Within two decades of its foundation, Stevenage faces the possibility of losing any characteristic of being "a town in the country" and of subsiding into a surrounding urban and suburban sea. In twelve years, the town has grown from 6,000 to 50,000. New proposals suggest a further increase to 140,000 in the next decade. At this point, it is not difficult to surmise that Stevenage would have joined Luton, Welwyn and Hitchin in a solid sprawl.

But it may well be that the pursuit of decentralized regional development can be combined with a reasonable acceptance of megalopolitan growth provided the authorities are prepared to accept controlled expansion in the central areas. It is in this context that the possibilities of such dynamically expanding urban areas as are

implied in the "linear city" and other related concepts, can be considered to counteract the effects of over-all splurge. Industry and services and people would still be permitted some movement to metropolitan areas but only along defined and designated lines of growth. Such permissiveness might take some of the pressure out of unplanned movement and give the authorities more freedom to get on with their tasks of building up regional centres at the same time.

One could theoretically argue that if London were allowed to expand say, along the Slough-Reading-Newbury axis, and the Channel Tunnel axis, pressure could be taken off Hertfordshire, Kent and Sussex. Stevanage could keep its amenities. Alternatively, one could consider the problem of Southern England as a series of counter-balancing urban magnets—with two or three new urban clusters of new towns (based on existing centres) within the magnetic field of a larger urban concentration. Such a pattern gives the advantages of scale which come from the fairly close co-existence of several million people but allows for reasonably sized civic units, for decentralized functions, for parks and recreation areas in between and for sizable stretches of farming where appropriate.

This concept of urban growth within a species of "magnetic field" is an alternative to linear growth and would, in some areas, undoubtedly produce more desirable social results. One wonders for example in the context of Washington, now growing more rapidly than any other American city, whether the "asteroid" approach, suggested in the National Capital Planning Commission, may not leave too many pressures at work on the centre of the capital itself. A "magnetic field" which built up Richmond and Norfolk might, added to a redeveloped Baltimore, take some of the pressure off what would be a great and beautiful national centre and allow the surrounding countryside to avoid the sprawl which already spreads far out into a rural Virginia.

To sum up, one should perhaps abandon sharp contrasts between decentralization and continued trends to centralization and suggest instead a regional, ecological or environmental approach to urbanization as one key factor in the whole field of change brought about by scientific and technological modernization. Within the same watershed of human geography, the plan may include the expansion of medium sized towns, some modernization of village structures and some controlled expansion in megalopolitan areas. The essential point is that all the steps should be taken with the same objective—the best possible economic and social evolution of the region, the best possible urban and non-urban environment for the developing society.

The difficulty about this basic concept of seeing urbanization as one factor in the dynamic deployment of a country's economic and social forces—an essentially environmental or ecological approach—is the lack of administrative expertise to turn it into the accepted policy of Governments, old or new. One has only to examine the published national plans of most countries to see the degree to which urbanization as a dynamic

concept is so new as barely to figure in the plans at all. Housing is a universal category in all plans—but housing in its ecological text is not.

One can see very clearly, for instance, in the Indian Plans that the inherited pattern of administration—inherited in fact from Whitehall—militates against a dynamic approach to urbanization. A multitude of elements in development—power, irrigation, transport, roads, co-operatives—are administered vertically. Only perhaps in rural community development is some effort made to look at their implications horizontally as they impinge on each other and mould the local community. But this is at the very smallest level of social organization. At higher levels, in small and intermediate towns, the atomization of administration is intense. Under such conditions, an urban strategy is all but ruled out and so far, India has no really definite policy of urban control.

Administrative obstacles are not the only ones. In most countries, existing units of government—not to speak of urban bureaucracies—have vested interests in maintaining what are no longer adequate structures of control. If urbanization is to be seen as part of a wide process of economic, social and technical transformation and the "watershed" concept of regional urban planning is to be accepted, some wider units of government at a regional level may need to be established, sometimes grouping a number of state governments—as conceivably in the eastern seaboard of America—or transcending borough and county councils in Britain. Such a sorting out of the levels of government seems indispensable to a properly functioning regional plan. At the same time, it can arouse furious political and official opposition.

But it is not only traditional administrative patterns that militate against dynamic concepts of urbanism. Administrators in the broadest sense of urban development and planning are also desperately scarce. The difficulty appears at all levels. Only a beginning has been made in urban studies, or rather the science of human settlements, and schools bringing together the various skills needed—economists, geographers, sociologists, engineers, architects—are still largely to be created. Developed countries lack planners and developing countries are almost wholly without them. If, therefore, the vast urban surge of the next forty years is to be canalized, the immediate need is for more institutes for the study of urban development, more trained men and women in the science of settlements, more assistance to developing countries in the formulation of urban and environmental plans. At present, the urban pressures in world society are far, far beyond any preparation being made to meet them.

THE NEW TOWN

Old cities inundated by traffic and made unsafe by motor accidents are warnings to new cities that men in community must be protected from the new lethal weapons they so blithely use. The concept put forward by the Buchanan Report—that of seeing cities on the analogy of houses in which the room and the corridor serve different purposes and the utility of the one is destroyed

if it is turned into the other—reinforces the earlier evolution of the idea of cities as confederations of neighbourhoods. To ensure the fullest opportunities for family nurture, sociability and housekeeping, the basic block of the city has to be built to a human scale and much of its life must be allowed unimpeded movement on foot. Separated from the neighbourhoods—round, under or sometimes over—run the greater arteries which command through traffic and guide the town's movements, in and out of the general stream of the community's life. But it is difficult to think of a truly human city in which the basic distinction between peaceful, social neighbourhoods and the crowded traffic corridors is not accepted.

The daunting problem at the town level is, however, not simply design. There are hints and beginnings, all over the world, of urban projects which are exciting and human and civil in the broadest sense. New dynamic concepts are beginning to appear.

But in the developing countries no one has overcome the problem of cost. Here one must sharply modify the concept of seeing urbanization as a single world-wide phenomenon, accompanying mankind's transfer to a technical and scientific civilization. On the issue of cost, the gap between developed and developing countries becomes a vital distinction. Broadly speaking one can say that in the communities round the North Atlantic—and to an increasing extent in the Soviet Union—the resources exist to create decent urban *milieux*. A great mass of the people have incomes which permit them to pay economic rents and to cover, through rates and taxes, the cost of urban services. To give one example of this buoyancy, the twelve new towns in England and Wales, after paying all interest and repayment charges on the loans made to them from the Central Government, showed in 1962/1963 a net revenue surplus officially estimated at £360,000, but which may, on rather more sophisticated calculations, be as high as £1,211,000.

Nor should one at this point fail to underline the relevance of the skills and resources available for more ambitious urban renewal in any society whose national income grows at least by 3 per cent a year, with anything from 5 to 8 per cent of it still earmarked for arms. It is a truism to point out that any move towards disarmament would release massive resources for more durable purposes. Yet it is well worth pointing out that urban renewal could be the single most effective alternative to armaments, both of general stimulus to the economy and of direct impact on the citizen's pursuit of happiness. Whether some Western peoples could persuade their elective representatives to accept the innocent and beneficial effects of what would, in fact, entail very large public expenditure is not quite so clear.

When we turn to the developing world, the picture is totally different. In the first place, only an infinitesimal number of town dwellers can afford economic rents—these may be taken to be roughly equal to 1 per cent a month of the capital cost. A few typical instances can be given. If one accepts the rule that not more than one-fifth of personal income should be spent on rent, then

two-thirds of the population of Salisbury, S. Rhodesia, cannot afford economic rent on a dwelling of customary standards. In Madagascar the average rents for only one room are 1,000 CFA francs a month. But 66 per cent of the population have incomes of less than 5,000 per month. Other comparisons turn on average wages. In the United Arab Republic an average dwelling rents at £E3.50 a month. Unqualified workers earn only £E8, skilled workers £E15. In Addis Ababa, the cheapest dwelling lets at 20 Ethiopian dollars a month, but only a quarter of the citizens have incomes above 150 dollars a month.

It is this fact of extreme poverty that sets limits to the alternative—open to more wealthy Governments—of providing housing and urban subsidies out of taxation. Generally, in developing areas the Government's relative inability to tax the rich, coupled with the relatively small number of rich people, means that taxation tends to come from the poor—mainly by way of import and export taxes and internal excise—from the cocoa farmers, from producers of primary products generally, from the purchasers of consumer goods. If, as so often happens, the largest effort in subsidized housing is made in the capital city where opportunities for better income and advancement are likely to be higher than anywhere else, subsidies to housing, slum clearance, sewers, urban water supplies and so forth may in fact represent very regressive, even savage taxation by which the poorer people in the countryside subsidize citizens with larger opportunities in the cities.

In any developing society, social services represent an extremely difficult element in economic planning. The direct returns may be small, the indirect returns hard to estimate. In economies desperately short of all resources, they inevitably absorb investment that might go to more directly productive use, releasing larger margins of reinvestable profit. It follows that wherever possible urban services should be paid for by the users at economic prices which cover costs including depreciation and interest charges—water supplies by water users, road development by drivers, power by those who employ it; the element of subsidy should be kept to a bare minimum. Given the shortage of capital available in general for urban development, Governments in mixed economies should also be prepared to sell houses to those prepared to make savings available for house property and in this way create a species of revolving fund for further development. The establishment of building societies has proved in some developing countries to be an effective way of coaxing private savings into the urban sector.

In short, Governments of poor lands, if given no hope of external subventions, may need to ration very strictly the capital budget going to any housing which is let at less than economic rents simply because the same capital devoted to farming or factories could be set to work producing quickly a surplus for further growth. How much should be devoted to housing is a question each Government has to answer for itself. There are no magic percentages. But clearly, in lands in the early

stages of development the scale of need cannot be used to determine urban programmes. In Morocco, for instance, an effort to meet basic needs in urban housing would swallow nearly 30 per cent of total government investment, Tunisia would require 40 per cent of gross capital formation, the United Arab Republic over 20 per cent. To settle as they have for about 10 per cent devoted annually to housing may be pragmatically about the right solution. But it is a figure which leaves a desperate backlog of unfulfilled need.

The difficulty can be somewhat mitigated. Within their power, Governments can try by mobilizing self-help and putting in minimum urban services to get some modest shelter for the crowding millions. If urban standards have to be kept to a very simple level, government can perhaps console itself that this very simplicity may discourage excessive migration to the towns by people anxious to profit by higher standards—just as the allotting of some housing capital to rural areas may slow down the flow while the siting of new housing in intermediate medium-sized towns may lessen pressure at the large centres. Yet the brutal fact remains that throughout the developing world urban needs infinitely exceed urban resources, and bad cities are the recipe for the bad life.

A WORLD POLICY FOR URBANIZATION

This is not a situation which a world can dismiss from its mind and conscience. Public opinion recognizes the brute physical evil of inadequate food. Is it sufficiently aware of the complex physical and spiritual evils of ugly, unhealthy, overcrowded and delinquent urbanism? The degree of present urban misery and the certainty that it will increase and worsen should be more widely grasped by world opinion. And the further hazard should be understood—that urban evils, unchecked, could mean the destruction of the very framework of stability on which the economic growth needed to end the evils must depend. Urban mobs, driven to despair by privation, can become so disorderly an element in national life that rational government itself is impeded. Then, as too many areas of the world have demonstrated, between coups, revolts and rebellions, the country can remain decade after decade, below the threshold of any advance at all. Modernization demands a certain stability, rationality and continuity. Leave the cities to degenerate into sinks of despair and nations may lose the means of ever climbing out of the pit.

There is thus *a priori* a strong case for giving the problems of urbanization a higher place in the priority list of international aid to development. This may seem to contradict the earlier emphasis on productive investment in industry and agriculture. Certainly, they must not be downgraded but there are reasons for supposing that the impact of foreign aid in these fields could be less immediate than in aid to urban development. So much in farming depends upon increasing the receptivity of country men's minds. The process will not be quick and only to a limited extent can it be assisted by foreigners. In industry, foreign investment runs up against all

kinds of local political, national and ideological difficulties. But massive assistance to urban needs could have an immediate impact for it quickly improves the condition of people who are often the liveliest and most ambitious—as well as the most frustrated—citizens in the country. And it by-passes most issues of ideology since in every type of society, a large measure of urban development is the responsibility of public authorities.

There is another internal advantage. In most developing countries, the young urban unemployed, constantly swollen by school-leavers from the countryside, are the most tragic flotsam of the coming modern society. Yet a flourishing building industry is a multiplier of activity in any economy. Consider Nairobi today, for instance. There a new Government has to confront at the same time a restless mass of young men—sometimes put above 60,000—seeking work, a large African population without houses and a very depressed building industry. A few millions of external aid injected into urban development in Kenya could bring all these separate problems together for solution and give its new Government an invaluable breathing space.

The various international agencies are beginning to put this challenge of urbanization into perspective. The United Nations Special Fund and the Expanded Programme for Technical Assistance⁵ look for increased capital to spend in this field. The Social Commission⁶ seeks to expand its role. The FAO supports the use of food surpluses for building workers in expanded programmes. The Alianza para el Progreso has put great emphasis on urban renewal. But it is clear that the efforts are quite insufficient.

The next need is to designate a number of countries as experimental areas for the new approach—countries preferably in different stages of development and with different cultural and political backgrounds. Carefully planned and executed experiments are needed at once to enable governments to begin acting a little less in the dark.

With the growth of information should go a growth of funds. The method of co-operation used successfully in the case of India's country plans—the consortium of donors under international chairmanship—might be an attractive precedent. One could envisage first an agreement on a body of urban experts to study urban needs in the context of comprehensive developments then the submission of their report to the national government and to the consortium and then consultations on (in free currency, in tied loans or in kind) that could be made available to supplement the basic urban effort of the country itself. There might even be a case, within the consortium, for working out some kind of city-to-city link in which wealthy urban communities take a continuing interest in the urban destiny of a city still in the developing stage. Such links might underline the common, world-wide problems of urbanization, lead to

⁵ The name has been changed to the United Nations Development Programme.

⁶ Now the Commission for Social Development.

useful professional interchanges, and draw ordinary citizens into a more concrete sense of solidarity with the developing world.

But the important point at this stage is not the scale and scope of such a programme—which cannot be measured in advance—but a commitment to the

principle of making a decent urban environment one of the highest priorities in the life of nations and a readiness to act before the urban Niagara of the next forty years engulfs the nations, developing and developed alike, and sweeps them beyond the point at which rational humane action is possible at all.



Downtown Los Angeles, California, United States of America

Areas shown in black—freeways, streets, alleys, parking lots and garages—are devoted exclusively to motor vehicles. Nearly two-thirds of the land is given over to the automobile at the very centre of the city



Credit: Atlanta Region Metropolitan Planning Commission

Downtown Atlanta, Georgia, United States of America

The centres of many American cities are afflicted with erosion from the demands of the automobile. The centre of Atlanta is dominated to 54 per cent, shown in black. In addition, a new freeway bordering the downtown (dotted area) reveals the space requirements of the new high capacity highways now being built in all large American cities

URBANIZATION IN LATIN AMERICA*

THE LATIN AMERICAN DEMOGRAPHIC CENTRE, SANTIAGO

THE DEGREE OF URBANIZATION

Latin America has undergone rapid urbanization during the last three decades. This process, as elsewhere in the world, has involved important social changes caused principally by the movement of population from the country and smaller towns into the big cities. In 1960 the urban population of Latin America constituted less than 50 per cent of the total. One may expect in the next few decades a continuation of the concentration of population and the emergence of new cities and the development of the suburban areas of the great centres of population.

The degree of urbanization differs significantly from one country to another within the region, and bears no relation to the density or size of population. It is probable that the differences expressed by the census figures do not always reflect the real situation. Such figures may

* Background Paper No. 3 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.

understate or exaggerate the case. Bearing in mind these inevitable limitations we will consider as urban all centres with over 20,000 inhabitants. By including only centres over 20,000 inhabitants one is able to eliminate agglomerations that are really semi-rural in character—from the point of view of economic activity—and, in general, to facilitate comparison between one country and another. Table 1 denotes the degree of urbanization in 1950 and 1960 (where a census has been held).

Three out of the four countries with the largest populations, i.e., Brazil, Mexico and Colombia (with a combined population, in 1960, of about 120,000,000), have an urban population of approximately 45-50 per cent of the total. Ten years previously, the urban population was between 36 and 43 per cent. Countries that have a relatively small population, but are nevertheless the most urbanized, except for Argentina, are: Chile, Cuba and Venezuela, with urban populations constituting, in 1950, 62.5, 56.3 and 53.8 per cent respectively of the total population. By 1960 the

Table 1. Urban-rural composition of the population of Latin American countries in 1950 and 1960 (approximate dates)

Country	Total population (thousands)		Urban population (census definition) (per cent)		Population living in nuclei of over 20,000 inhabitants (per cent) ^a	
	1950	1960	1950	1960	1950	1960
Brazil	51,944	70,967	36.2	45.1 ^b	18.4	29.1 ^b
Mexico	25,791	34,923	42.6	50.7	26.4	33.6
Argentina	15,894	20,009	62.5	...	47.9	...
Colombia	11,548	^d	38.0	^d	22.4	^d
Peru	6,208	10,364	35.4	47.1 ^b	14.2	28.4 ^b
Chile	5,933	7,340	60.2	66.5 ^c	42.9	...
Cuba	5,829	^d	56.3	^d	36.3	^d
Venezuela	5,035	7,524	53.8	62.5 ^b	31.6	47.2 ^b
Ecuador	3,203	4,581	28.5	35.3 ^b	18.4	27.5 ^b
Guatemala	2,791	^d	25.0	^d	11.2	^d
Bolivia	2,704	^d	33.6	^d	21.9	^d
Dominican Republic	2,136	3,014	23.8	30.5 ^b	12.1	20.0 ^b
El Salvador	1,856	2,511	36.5	39.0 ^c	12.9	17.3 ^b
Honduras	1,369	1,883	29.0	...	...	11.5 ^b
Paraguay	1,328	1,817	34.6	35.4 ^b	15.6	16.8 ^b
Nicaragua	1,057	...	34.9	...	...	...
Panama	805	1,076	36.0	41.5	30.4	35.0
Costa Rica	801	1,325	33.5	34.5 ^b	22.6	22.2 ^b

^a This figure includes that part of the population permanently resident in the principal nucleus, according to the particular definition of this nucleus in each country.

^b Based on provisional and interim data.

^c Figures based on samples (a 1 per cent sample in the case of Chile, and a 5 per cent sample in that of El Salvador).

^d No census.

proportion had risen in Chile to 66.5 per cent and in Venezuela to 62.5 per cent. The remaining countries show a lower degree of urbanization, probably below 40 per cent in 1960, with the exception of Panama and Peru (close to 50 per cent).

Considering the tendency towards accelerated urbanization, there are grounds for predicting an increasing concentration of the population in urban centres in the coming decades. This process will be highly significant in countries that, like Brazil, Mexico and Colombia, have relatively large populations. In the smaller countries, such as the Central American republics, Ecuador, Bolivia and Paraguay, urbanization will not cause the emergence of important urban centres in the near future. Thus, as has happened up to now, the city which already enjoys a predominant position will increase this predominance still further.

THE BIG CITIES

In 1960, Latin America contained ten cities of over 1 million inhabitants. The combined population of these cities is over 25 million, or 11 per cent of the population. Another ten cities with populations of between 500,000 and 800,000 contain nearly 6 million. Nine of these cities are to be found in the countries with the biggest populations: Brazil, Mexico, Argentina and Colombia. A further twenty-one cities between 250,000 and 500,000 inhabitants include eight cities that are capitals of their respective countries. These figures indicate that there are no less than thirty cities that, because of the dimensions they have already attained, must expect to have large growth problems in the immediate future.

Table 2. Distribution according to size from 1940 to 1970 of 108 nuclei of over 20,000 inhabitants (in 1950), selected from Brazil, Mexico, Colombia and Venezuela

Size (number of inhabitants)	1940	1950	1960	1970 ^a
Over 1,000,000 . .	3	3	5	9
500,000-999,000 . .	—	2	8	9
250,000-499,000 . .	5	9	8	13
100,000-249,000 . .	12	19	42	59
50,000-99,000 . . .	22	41	39	18
20,000-49,000 . . .	49	34	6	—
Under 20,000 . . .	17	—	—	—
TOTAL	108	108	108	108

^a Estimate.

Table 2 gives an idea of the evolution of 108 nuclei of population that, around 1950, had over 20,000 inhabitants, situated in Brazil, Mexico, Colombia and Venezuela. These nuclei are classified according to the number of inhabitants they contained in 1940, 1950 and 1960. The estimates for 1970 assume past rates of growth. Of the 108 nuclei under consideration there were thirty-three in 1950 with over 100,000 inhabitants. In 1960, there were sixty-three, and by 1970 one may expect ninety. When we consider cities over half a million,

the three in 1940 increased to thirteen in 1960 and will probably rise to eighteen by 1970.

DISPARATE GROWTH OF THE URBAN NUCLEI

In eight of the fourteen countries listed in table 3 the average annual rate of increase of the population was over 2.9 per cent in the decade 1950-1960. In a further four countries it was between 2.5 and 2.8 per cent. Only in Argentina was there a relatively small increase—1.7 per cent.

It is hardly surprising that the population of the urban centres should also have shown an extraordinarily large growth. In several countries, and especially during the last two decades, cities over 100,000 inhabitants and smaller nuclei of between 20,000 and 99,000 inhabitants (excluding the principal nucleus in each country) grew, on an average, at the same rate as the principal nucleus. This was so in the cases of Brazil, Mexico, Colombia (1938-1951) and Venezuela. In these countries, the rate of growth of the principal nucleus was over 4 per cent during the two decades after 1940, and frequently over 5 per cent. Similar figures could be quoted for the remaining nuclei.

But while in Argentina and Chile the growth of the principal nucleus was extremely rapid, there was a relatively slow growth of the remaining nuclei of over 20,000 inhabitants, although there were exceptions to this rule. In Costa Rica, El Salvador, Honduras, Panama and the Dominican Republic, the rate of growth of the principal nucleus is also high, close to or exceeding 4 per cent, and particularly high in the Dominican Republic (6.7 per cent). Here we are speaking, however, of small nuclei of approximately 100,000 to 300,000 inhabitants. Similarly, the rate of increase of the principal nucleus in Peru and Ecuador is somewhat above 5 per cent, and the corresponding figure for other nuclei of over 20,000 inhabitants is about 4 per cent. In conclusion, both the nuclei over 100,000 inhabitants and the nuclei between 20,000 and 99,000 inhabitants registered an increase of around 4 per cent or higher during the last decade.

CONCENTRATION OF THE POPULATION

It is frequently stated that each country in Latin America possesses few important cities (in many cases only one), and also that the principal nucleus is disproportionately large in relation to the other nuclei of second or third rank. The first assertion still holds true for those countries with small populations, but it is no longer applicable to Brazil, which has thirty-one cities over 100,000 inhabitants, or to Mexico with seventeen, or Colombia with ten. Neither has it been applicable to Argentina for several decades.

Nevertheless, the principal nucleus is still disproportionately large. In 1950, the Federal District of Mexico contained about twice the combined population of the nine other cities over 100,000 inhabitants. In Argentina (1947), the population of the Gran Buenos Aires district was three times that of the remaining eight nuclei of

Table 3. Annual rates of population increase by country, the principal nucleus, and cities and minor nuclei of selected countries in recent decades
(Classified by number of inhabitants about 1950)

Annual rates of increase, in percentages ^a								
Country	Intercensal period (Dates)	Years duration	Country	Principal nucleus	Other cities of over 20,000 inhabitants	Nuclei of 20,000-99,000 inhabitants	Summary	
							Nuclei of over 20,000 inhabitants	Rest of country
Brazil	1940-1950	9.83	2.3	3.9	(12)	(36)	(50)	
	1950-1960	10.17	3.0	4.3	4.0	4.3	4.0	2.0
					4.6	5.3	4.6	2.6
Mexico	1930-1940	9.75	1.8	3.6	(9)	(52)	(62)	
	1940-1950	10.25	2.6	5.2	...	...	...	...
	1950-1960	10.00	3.0	4.6	5.1	4.6	4.7	2.3
					4.7	4.6	4.7	2.3
Argentina	1914-1947	32.92	2.0	2.3	(8)	...	(9)	
	1947-1960	13.50	1.7	3.0	...	...	...	...
					0.8 ^b	...	2.3 ^b	1.2 ^b
					(5)	(22)	(28)	
Colombia	1938-1951	12.83	2.2	5.1	5.6	4.9	5.2	1.5
						(10)	(11)	
Peru	1940-1961	21.00	2.4	5.1	^c	3.6	4.6	1.8
					(2)	(21)	(24)	
Chile	1930-1940	10.00	1.6	2.9	0.9	1.5	2.1	1.3
	1940-1952	11.42	1.4	3.0	1.3	2.4	2.6	0.7
	1952-1960	8.58	2.5	4.1	...	...	...	—
					(2)	(17)	(20)	
Venezuela	1936-1941	4.92	2.7	6.5	3.6	3.7	4.8	2.2
	1941-1950	9.00	3.0	6.9	7.1	7.0	7.0	1.4
	1950-1961	10.25	3.9	5.4	5.7	6.2	5.8	2.8
					(1)	(4)	(6)	
Ecuador	1950-1962	12.00	2.9	5.4	4.4	3.8	4.8	2.4
						(1)	(2)	
Dominican Republic	1950-1960	10.00	3.4	6.7	...	3.8	6.1	3.0
						(2)	(3)	
El Salvador	1930-1950	20.08	1.3	2.9	^c	1.5	2.4	1.1
	1950-1961	10.92	2.7	3.8	^c	3.4	3.7	2.6
						(1)	(2)	
Honduras	1950-1961	10.83	2.9	5.6	^c	8.6	6.4	2.6
						(1)	(1)	
Paraguay	1950-1962	12.00	2.6	3.2	^c	^c	3.2	2.5
						(1)	(2)	
Panama	1930-1940	10.67	2.7	4.3	^c	3.5	4.1	2.2
	1940-1950	10.25	2.5	3.6	^c	1.6	3.1	2.2
	1950-1960	10.00	2.9	4.1	^c	1.2	3.6	2.5
						(1)	(1)	
Costa Rica	1927-1950	23.00	2.2	2.9	^c	^c	2.9	2.1
	1950-1963	12.83	3.8	3.7	^c	^c	3.7	3.9

^a $\frac{2(N^n - N^0)}{n(N^n + N^0)}$, where N^0 and N^n are the population at the beginning and end of the census-period, and n is the number of years in the census period.

^b Population of intermediate administrative divisions (*partidos* or *departamentos*) with cities of over 100,000 inhabitants as assessed in the 1947 census.

^c In 1950 there was no nucleus in this category.

N.B. Figures in parentheses indicate the number of nuclei in that size-category in 1950. In all periods, the growth of these nuclei were taken into account, irrespective of their size at previous or later census.

over 100,000 inhabitants. The situation in Venezuela is similar to that in Mexico, and that in Chile to that in Argentina.

Brazil and Colombia present a somewhat different picture. The population of the principal nucleus is only half the combined population of the remaining nuclei of over 100,000 inhabitants. In each country, the combined populations of the first and second largest nucleus is approximately equal to the population of the remaining cities of over 100,000 inhabitants. In most

other countries, the fact that there are only one or two cities of any importance or none at all, confers an overwhelming importance on the principal nucleus.

The importance of the principal nucleus in relation to the total population of the country is an exact measure of the concentration of population, and this facilitates comparison of space and time. For this purpose, the principal nucleus includes the contiguous urban area falling within its immediate sphere of influence. The countries with the highest proportion of their population

concentrated in the principal nucleus in 1960 were: Argentina (33.8 per cent), Chile (26.3 per cent), Panama (27.3 per cent), Costa Rica (22.2 per cent), Cuba (20-23 per cent) and Uruguay. Following these countries are Peru (17 per cent), Venezuela (15 per cent), Mexico (14 per cent), Paraguay (18 per cent). Brazil and Colombia are remarkable for the small proportion of the population represented by the principal nucleus.

The relative importance of the population of the principal nucleus has, generally speaking, increased continuously. In Mexico, Venezuela and Chile this proportion has almost doubled in the last thirty years. In the other countries the tendency towards concentration has been less pronounced.

A more accurate assessment of this process of concentration may be made by measuring the part of the total population increase accounted for by the principal nucleus. In the last decade, the following percentages of the population increase accounted for by the principal nucleus have been remarkable for their magnitude: Argentina, 55.5 per cent; Chile, 41.0 per cent; Panama, 37.2 per cent; Peru, 28.7 per cent; Mexico, 19.9 per cent; and Venezuela, 19.3 per cent. (See table 4.)

Comparing these tendencies in successive periods, it may be stated that this type of concentration became

especially pronounced after 1930. It may be concluded that the velocity of the concentration in the principal nuclei has reached, or is reaching, its maximum point in several countries, and that a diminution of this velocity is to be expected.

CAUSES AND CONSEQUENCES OF URBANIZATION

The high rate of urbanization that has generally been maintained during the last few decades in Latin America, and in particular the rapid growth of the biggest cities, must be attributed principally to movements of internal migration. The cities of over 1 million inhabitants—with the exception of Gran Buenos Aires (3 per cent)—grew at a rate of over 4 per cent during the last decade. This indicates an increment due to migration of between 1.5 per cent and 2.5 per cent annually. These tendencies are not peculiar to recent times. As far as can be established, they manifested themselves with at least as great intensity during the decade 1940-1950. A 1962 enquiry into immigration in the Gran Santiago district¹ indicated that two-thirds of the immigrants who had arrived during the previous decade came from nuclei

¹ Latin American Demographic Centre, *Encuesta sobre Inmigración en el Gran Santiago* (E/CN.CELADE/A.15, Series A), Santiago, Chile, 1964.

Table 4. Relationship between the populations of the principal nucleus and the country and their respective intercensal increase in recent decades

Country ^a	Intercensal period	Principal nucleus		Percentage of increase of country absorbed by principal nucleus	Ratio of column 3 to column 2
		Population (thousands) c	Percentage of country b		
		(1)	(2)	(3)	
Brazil	1940-1950	4,576 ^d	8.2	13.9	1.7
	1950-1960	7,133 ^d	9.5	13.4	1.4
Mexico	1930-1940	1,758	8.2	17.0	2.1
	1940-1950	3,050	10.6	21.1	2.0
	1950-1960	4,871	13.0	19.9	1.5
Argentina	1914-1947	4,479	27.4	30.5	1.1
	1947-1960	6,763	31.3	55.5	1.8
Colombia	1938-1951	648	4.8	11.2	2.3
Peru	1940-1961	1,716	13.5	28.7	2.1
Chile	1920-1930	713	15.2	36.0	2.4
	1930-1940	952	17.9	32.4	1.8
	1940-1952	1,350	21.0	43.8	2.1
	1952-1960	1,927	24.7	41.0	1.7
Venezuela	1936-1941	325	7.8	18.5	2.4
	1941-1950	621	10.6	25.0	2.4
	1950-1961	1,101	13.7	19.3	1.4
Dominican Republic	1950-1960	367	10.7	21.1	2.0
El Salvador	1930-1950	162	7.6	17.3	2.3
	1950-1961	248	9.4	13.3	1.4
Honduras	1950-1961	134	6.3	12.1	1.9
Paraguay	1950-1962	305	16.3	20.0	1.2
Panama	1930-1940	133	19.8	32.3	1.6
	1940-1950	193	22.8	33.0	1.4
	1950-1960	294	25.9	37.3	1.4
Costa Rica	1927-1950	181	21.3	27.4	1.3
	1950-1963	294	22.4	21.6	1.0

^a In decreasing order by population (as of 1950).

^b Estimated percentage in the middle of the period in question, calculated by taking the average of the populations of the country and of the principal nucleus at the beginning and end of the period.

^c The population is assessed as at the end of the period.

^d Population of the State of Guanabara and of the Municipality of São Paulo.



Credit: Mexican Government Tourism Department

Mexico City

In many countries, especially Latin America, even before the problems of raising incomes and providing minimum housing can be solved, the massive problems arising from metropolitan "affluency" place major new handicaps on metropolitan development. Note the acute traffic congestion

of over 5,000 inhabitants (1952 size). The immigrants coming from nuclei of over 20,000 inhabitants constituted 42 per cent in the decade 1952-1962 and 37 per cent in the decade 1942-1951. We may expect a similar immigration into the most important cities of Argentina, Brazil, Mexico and Colombia.

In the small and medium-sized towns the immigrants will obviously include a higher proportion of people coming from rural areas. The moderate rate of growth of the population of the smaller nuclei is an indication that these nuclei serve as stopping places for many migrants on their way to the big cities, although this process often takes two generations. In Colombia, for example, the nuclei from 1,500 to 4,999 inhabitants grew at an annual rate of 1.8 per cent in the period 1938-1951; whereas the natural increase for the country as a whole was 2.5 per cent. This growth is not, however, a universal phenomenon, for in Venezuela the nuclei from 1,000 to 4,999 inhabitants grew at a rate of 4.3 per cent during the period 1941-1950; though the rate of increase for nuclei of 20,000 inhabitants was 6.8 per cent.²

The principal conclusion from the data available is that the migratory movements swelling the population of the big cities, though they come from all over the country, are chiefly composed of citizens of other smaller cities, including some who have lived in urban surroundings. Consequently, the problem of growth of

² Figures for rates of immigration in five Latin American cities, corresponding to the decade 1940-1950, indicate rates of 3 per cent annually, or in excess of this figure, with one exception. The following annual rates (in percentages) refer to the male population that was over ten years old at the end of the survey period: São Paulo (Brazil), 3.5; Bogotá (Colombia), 3.4; Caracas (Venezuela), 3.0; Maracaibo (Venezuela), 5.3; Rio de Janeiro (Brazil), 1.4. The figures for female immigration are about the same, sometimes a little higher or lower. These results provide ample confirmation of the important role of the migratory movements in the remarkable growth of the population of the big cities.

large nuclei of population cannot be considered in terms of immigration from rural areas playing the predominant role.

The factors that cause these migratory movements are varied, and little is known about them, although there are grounds for asserting that they are chiefly economic. In present circumstances, when there is a sharp contrast between conditions of economic and social development in one or a few cities and those of the rest of the country, a determining factor must be the poor economic opportunities of the countryside. For the rural worker, the best opportunities are in the villages and small towns of his region. Then, too, manual workers engaged in non-agricultural occupations will usually find or hope to find more stable employment in the big cities. Finally, technicians, office-workers and other "white-collar" groups also see in the big cities better opportunities of finding employment or higher remuneration.

It could be estimated that the population living in Latin American cities of over half a million in 1960 is increasing by over a million per year. More than half of this figure is made up of immigrants.³ If one adds to this the cities of from 250,000 to 500,000 inhabitants, this increase would be as high as 1.3 million per year,⁴ of which 600,000-700,000 would be accounted for by immigrants. This population increase has meant and will continue to mean a demand for thousands of new houses, schools, urban transport services, sanitary and medical services, and every kind of public utility. One may ask how far these requirements have been adequately fulfilled, or to what extent the rapid increase has been responsible for the growth of shanty-towns entirely lacking in urban services.

³ Twenty cities with a total of approximately 30 million people.

⁴ Twenty-one cities with a total of approximately 7 million people.

URBANIZATION IN SOUTH-EAST ASIA*

THE DEMOGRAPHIC TRAINING AND RESEARCH CENTRE, BOMBAY

One of the major effects of the rapid population growth and increased industrialization in Asian countries is the dramatic increase in rural to urban migration. Such movements have been relatively slow in the past; in recent years, however, not only has the rate increased considerably, but there is also much evidence that it is likely to increase very rapidly in the coming years. The exact reasons for this great new movement are not yet very clear. On the one hand, the rapidly declining death rate along with a high and constant birth rate has resulted in an unusual rate of population growth; the rural areas, having approached the limits to which they can provide useful employment, are beginning to export the excess to the cities. On the other hand, economic development and accompanying cultural changes are loosening the hold which the village culture has had over individuals. More and more villagers are not only willing but anxious to desert the village economy for the gamble of increasing their economic welfare in cities.

But whatever be the cause, the traditional immobility of the Asian peasants is a thing of the past and the cities of Asia are passing through a period of unprecedented population growth. Such a massive population movement from rural to urban areas calls for an integrated approach to the problem of industrialization and urbanization, if a lot of wasteful spending is to be avoided and if the cities of Asia are to be rescued from becoming slums altogether.

PATTERN OF URBAN GROWTH IN ECAFE COUNTRIES

Urbanization, or the increase in the proportion of a country's population living in places defined as urban, is a recent phenomenon in most of the countries of Asia. In many of these countries the level of urbanization is very low compared to countries in Europe or Northern America. The United Nations has estimated that around 1950 the proportion of urban population in this region was approximately 18 per cent.¹ A recent estimate made at the Demographic Centre, Bombay, shows that it increased to about 24 per cent around 1960. Thus, compared to Europe where the degree of urbanization

was about 35 per cent in 1950 or in Northern America where it was 42 per cent,² the degree of urbanization in Asian countries is very low even at present.

Although the degree of urbanization is low, there are a few countries in the region where it is high. In Japan, according to the 1960 census, 63.5 per cent of the population was living in urban areas. In Taiwan, the urban population formed 56.0 per cent in 1955. In Hong Kong and Singapore, the proportion of urban population is quite high. On the other hand, in India, Pakistan, etc., the degree of urbanization is even now very low. The available data on the degree of urbanization are given in Table 1.

Table 1. Percentage of population living in urban areas in Asian countries

Country	Year and source	Percentage urban
Sarawak	1960 (C)	15.0
Ceylon	1956 (E)	17.6
Taiwan	1955 (E)	56.0
Malaya, Federation of . . .	1957 (C)	42.7
Singapore	1960 (C)	63.0
Hong Kong	1960 (C)	77.0
India	1961 (C)	18.0
Iran	1956 (C)	30.1
Japan	1960 (C)	63.5
Korea (Republic of) . . .	1960 (SA)	28.0
Pakistan	1961 (C)	13.1
Philippines	1956 (SS)	35.3
Thailand	1960 (C)	11.8
Cambodia	1958 (E)	12.8

(C) — census; (E) — estimate; (SS) — sample survey; (SA) — statistical abstract.

Not only has the level of urbanization been low, but until very recently the rate of growth of urbanization was also slow. In India the proportion changed only by about 0.7 per cent from 17.3 to 18.0 per cent during 1951-1961. Though this may have been due to a change in definition, even if the same definition were used the increase would not have been more than 4 per cent.³ In Pakistan the level of urbanization during 1951-1961

* Background Paper No. 2 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.

¹ United Nations, Economic Commission for Asia and the Far East, *Economic Survey for Asia and the Far East 1953* (Sales No.: 53.II.F.8).

² In localities of 20,000 and more population. Around 1950—, nearly 13 per cent of the population in ECAFE countries (inclusive of China (mainland) and North Korea) was living in such localities.

³ Demographic Training and Research Centre, *Newsletter*, Issue No. 9 (Bombay), December 1962.

increased by about 2.7 percentage points. But in Japan the urban proportion increased from 37.5 in 1950 to 63.5 in 1960, or an increase of about 26 per cent. In Malaya also the increase in recent years has been very large, about 16 per cent during 1947-1957. Thus except in Japan, the Republic of Korea and the Federation of Malaya, the rate of urbanization is not very high.

In any analysis of urban problems, the increase in the volume and the change in concentration of urban population are perhaps of greater significance than knowledge about the change in urbanization. The latter may be quite significant in any macro analysis relating to economic development, but for planning to face urban problems of housing or water supply, the volume and distribution by size and class of the urban population are more relevant. Where total population growth is rapid the annual increase in urbanization in certain respects hides the extent of the increase in urban population. As a consequence, in a situation where

the rural growth is also large, the changes in the urban proportion will not reflect the changes in the size of the urban population.

For example, though the urban proportion changed only 0.7 per cent in India during 1951-1961, the volume of urban population increased about 17 million, or 27.0 per cent. The increase in urban population in Japan was 28 million during 1950-1960 which is 90.0 per cent of the urban population in 1950. The volume and increase of urban population in some of the countries of this region are given in table 2.

The growth of population in some of the large towns has been even more significant. Greater Bombay increased by 1.15 million, or 39 per cent of its population in 1951. The increase in Delhi was even greater: 64.0 per cent of the 1951 population. Karachi's population increased by 80.0 per cent and Dacca's 66.0 per cent during 1951-1961. Table 3 gives the growth rate of some of the major cities of the region.

Table 2. Volume and increase of urban population in selected ECAFE countries

Country	Year and source	Urban population (1,000)	Year and source	Urban population (1,000)	Increase in the volume (1,000)	Average annual rate of growth
Ceylon	1946 (C)	1,023	1956 (E)	1,570	547	5.3
Taiwan	1947 (E)	3,295	1955 (E)	5,083	1,788	6.8
Malaya, Federation of	1947 (C)	1,301	1957 (C)	2,680	1,379	10.6
India	1951 (C)	62,277	1961 (C)	78,836	16,559	2.7
Japan	1950 (C)	31,203	1960 (C)	59,333	28,130	9.0
Korea, Republic of	1949 (C)	3,962	1955 (C)	6,960	2,998	12.6
Pakistan	1951 (C)	7,863	1961 (C)	12,295	4,432	5.6
Sarawak	1947 (C)	59	1960 (C)	112	53	6.9
Philippines	1948 (C)	4,631	1956 (SS)	7,621	2,990	8.1
Thailand	1947 (C)	1,735	1960 (C)	3,022	1,287	5.7

(C) — census; (E) — estimate; (SS) — sample survey.

Table 3. Population growth in major cities of ECAFE countries

Country	City	Period	Population according to latest census (1,000)	Average annual rate of increases
Ceylon	Colombo	1946-1953	426	2.53
Malaya, Federation of .	Kuala Lumpur	1947-1957	316	7.95
India	Bombay	1951-1961	4,152	3.87
	Calcutta (Metropolitan)	1951-1961	2,927	0.85
	Delhi	1951-1961	2,359	6.42
	Madras	1951-1961	1,729	2.21
	Hyderabad	1951-1961	1,251	1.11
	Bangalore	1951-1961	1,207	5.36
	Ahmedabad	1951-1961	1,206	3.75
Pakistan	Karachi	1951-1961	1,913	7.96
	Lahore	1951-1961	1,296	5.27
	Dacca	1951-1961	557	6.58
	Hyderabad	1951-1961	435	7.98
Japan	Tokyo	1950-1960	8,310	5.43
	Osaka	1950-1960	3,012	5.40
	Nagoya	1950-1960	1,592	5.44
	Yokohama	1950-1960	1,376	4.47
	Kyoto	1950-1960	1,285	1.66
	Kobe	1950-1960	1,114	4.56
Singapore	Singapore	1947-1957	912	3.41

It is evident from these figures that the growth of urban population, and of the population of large cities in particular, has been quite high when compared to the growth of the general population in these countries. A substantial portion of the total increase is due to internal migration. In Japan recent data show that nearly two-thirds of the population increase in the six major cities is due to migration. In fact nearly 98.0 per cent of the over-all increase of population of Japan during 1955 to 1960 is explained by the increase of population in the seven metropolitan prefectures: Tokyo, Kanagawa, Aichi, Osaka, Hyogo, Saitama and Chiba.

Even though urbanization and population redistribution have not reached such an extent in the other countries as in Japan, the contribution of internal migration is quite substantial in most of the big cities of these countries. In Greater Bombay, for example, it is estimated that during 1941-1951 more than 80.0 per cent of the total growth was due to migration. In 1961, out of 4.15 million persons, 1.20 million or nearly 29.0 per cent were migrants who came to the city during 1951-1961. The situation in many other cities of India is not very different. But there are a few instances in other countries of the region where the contribution of migration to the increase of Colombo city during 1946-1953 was only 16.0 per cent of the total increase. But such cases seem to be rare. In general, the principal source of increase of urban population is rural-to-urban migration.

In the absence of clear empirical evidences, there is a lot of speculation on the precise causes of such large-scale migration. From the little we know we may infer that rural problems rather than urban attractions play a crucial role in this movement. The rapid decline in the death rates and the consequent increase in population growth have contributed to a variety of problems in the rural areas. Most of these problems arise from decreasing cultivable land *per capita* and increasing rural unemployment and under-employment. Improvement in rural educational standards and in the communication between rural and urban areas has made the rural people aware of their problems and given the hope that these are perhaps not inevitable and can be redressed by migrating to cities. In a study on India it is found that areas which experience large rural-to-urban migration also have a high rate of unemployment. Thus it seems that the rural population migrate to cities not so much to avail themselves of the employment opportunities and other facilities in the urban areas, but more to avoid the problems in the rural areas.

The question whether migration to cities is caused primarily by urban "pull" factors or rural "push" factors has important consequences on the characteristics of the migrants. If urban attractions are the cause of migration, the number and characteristics of migrants will be regulated by these attractions. Migration will take place only when there is a need for more persons in the cities. The characteristics of the migrants will also be determined by the skills needed in the city. In such cases

it is unlikely that any big gap will ever arise between urbanization and urban development. On the other hand, if the migrants move to cities because of the rural problems, the number and characteristics are mostly governed by these problems. In such cases, the volume of migration may not have any relation to the urban facilities. A serious gap in the degree of urbanization and the amount of available urban facilities is perhaps a concomitant of such a situation. The conditions in most of the Asian cities bear out this point.

The gap between employment opportunities and aspirants for employment is perhaps the most serious. There is considerable evidence in India and in some of the other countries of the region that the trend in urban unemployment and under-employment is upward. In India the Third Five-year Plan started with a backlog of about 9 million unemployed. Though the target during the Plan was to create new jobs for all the new entrants to the labour force, the performance during the first two years of the Plan has shown that the backlog might go up to more than 12 million by the end of the plan period.⁴ In Greater Bombay the rate of unemployment according to the 1951 census was 2.6 per 100 persons in the labour force. The corresponding figure in 1961 was 4.6 per cent among males and 3.4 per cent among females. The variation of the unemployment rate by size of locality in India is indicated in table 4. Evidently unemployment and under-employment are most serious in large cities.

Table 4. Level of urban unemployment, India, 1956

	<i>Small cities</i>	<i>Large cities</i>	<i>Four largest</i>	<i>Total</i>
<i>Millions</i>				
Population	34.8	24.1	12.6	71.5
Labour force	11.2	8.7	5.1	25.0
Gainfully occupied	10.26	8.05	4.21	22.5
(Severely under-employed)	0.96	0.79	1.06	2.8
Unemployed	0.94	0.65	0.89	2.5
<i>Percentage</i>				
Unemployed	8.4	7.5	18.4	10.0
Under-employed	8.6	9.1	20.1	11.2
Un- and under-employed	17.0	16.6	38.5	21.2

SOURCE: Wilfred Malenbaum, "Urban unemployment in India", *Pacific Affairs* (New York), No. 30 (1957), p. 140.

The relatively greater influence of "push" factors on migration to cities is more clearly demonstrated by the deplorable housing conditions in some of the large cities. According to the 1961 Census of Greater Bombay about 72.0 per cent of the city's households had only one room, and each of them was occupied on an average by five persons. The full distribution is given in table 5. Housing

⁴ Government of India, Planning Commission, *Towards a Self-Reliant Economy* (New Delhi), p. 152.

Table 5. Distribution of households by number of rooms and the average number of members per room, Greater Bombay, 1961

<i>Rooms per household</i>	<i>Percentage of households</i>	<i>Average number of persons per room</i>
No regular room	2.42	—
One room	72.32	4.97
Two rooms	16.47	2.85
Three rooms	5.04	2.12
Four rooms	2.11	1.74
More than four rooms	1.64	1.63

conditions in other cities in India are no better. As in the case of unemployment, the housing problem is greater in bigger cities than in smaller ones, as is evident from table 6.

Table 6. Percentage of families living in one room or less by locality size

Rural India	34
Urban	44
Four big cities	67
Calcutta	79

SOURCE: Government of India, National Sample Survey, 7th round, 1953-1954, quoted in *National Buildings Organization, Monograph on the Housing Situation in India* (1959).

URBAN DEVELOPMENT PLANNING

Unemployment and housing shortages are perhaps the most serious urban problems in South-East Asia, but by no means the only ones. The urban problems are huge and unless a planned urban-industrial pattern is developed to tackle these problems, the living conditions in the towns and cities of Asia might deteriorate to such

an extent that improvement will become extremely difficult and very expensive.

Planning for future urban development requires a knowledge of the magnitude of the problems and the most efficient means of dealing with them. A fairly good approximation of the magnitude of the urban problems can be obtained from the estimates of the future urban population.

One procedure is to estimate the future degree of urbanization in a developing country based on experience of another country which has already reached a high degree of urbanization. This procedure was used by Kingsley Davis for estimating the future urban population of India.⁵ His projection assumes that the "proportion living in towns and cities will describe the same sort of curve—an 'S', or logistic curve—in India that it has described in the past in more advanced countries". The United States of America reached India's 1951 percentage in cities 20,000-plus and its percentage in 100,000-plus in 1858-1859. Estimates of the proportion of the estimated population produce estimates of the future urban population.

Another method is given by R. M. Sundrum and others for Ceylon.⁶ Their method is also based on the experience of other countries, but instead of using the degree of urbanization as the basis for projections, they have used the relation between the rate of growth of the urban population and that of the total population. Their calculations shown in table 8 give estimates for the future urban population of Ceylon.

⁵ Kingsley Davis, "Urbanization in India, past and future" in *India's Urban Future*, ed. Roy Turner (Berkeley, University of California Press, 1962), pp. 10-11.

⁶ Government of Ceylon, National Planning Commission, *Manpower Resources of Ceylon, 1956-1981* (Colombo, Ceylon, Planning Secretariat), p. 22.

Table 7

	<i>Per cent</i>		<i>Population</i>	
	<i>20,000- plus</i>	<i>100 000- plus</i>	<i>20,000- plus</i>	<i>100,000- plus</i>
1951	11.9	7.8	42,448	27,927
1975	19.3	13.1	110,000	78,257
2000	30.8	21.2	308,000	212,000

Table 8. Estimated urban population of Ceylon, 1956-1981

<i>Year</i>	<i>Urban population (in '000s)</i>			<i>Percentage of total population</i>		
	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
1953	723	555	1,278	16.3	14.0	15.2
1956	832	656	1,487	16.9	14.7	15.9
1961	1,032	835	1,867	18.2	16.1	17.2
1966	1,293	1,060	2,353	19.8	17.5	18.7
1971	1,612	1,351	2,963	21.4	19.2	20.3
1976	2,006	1,711	3,717	23.1	20.9	22.0
1981	2,485	2,156	4,633	24.9	22.7	23.7

The problem of cost of urbanization is an important factor to be considered when planning for urban development. There are different ways of redistributing the rural population and they are not all equally efficient economically. One method is to discourage migration to large cities by developing a number of small urban centres spread all over the country. In India a concerted effort was made to decentralize industries and carry work to the village. "The pattern of industrial activity that should gradually emerge is that of a group of villages having its natural industrial and urban centre. These small urban centres will be similarly related to bigger ones. Thus a pyramid of industry, broad-based on a progressive rural economy will be built up. In such an organization small centres can experience a co-operative interest in the bigger ones and these latter would develop a genuinely supporting instead of an exploitational relationship towards the smaller towns and the countryside."⁷

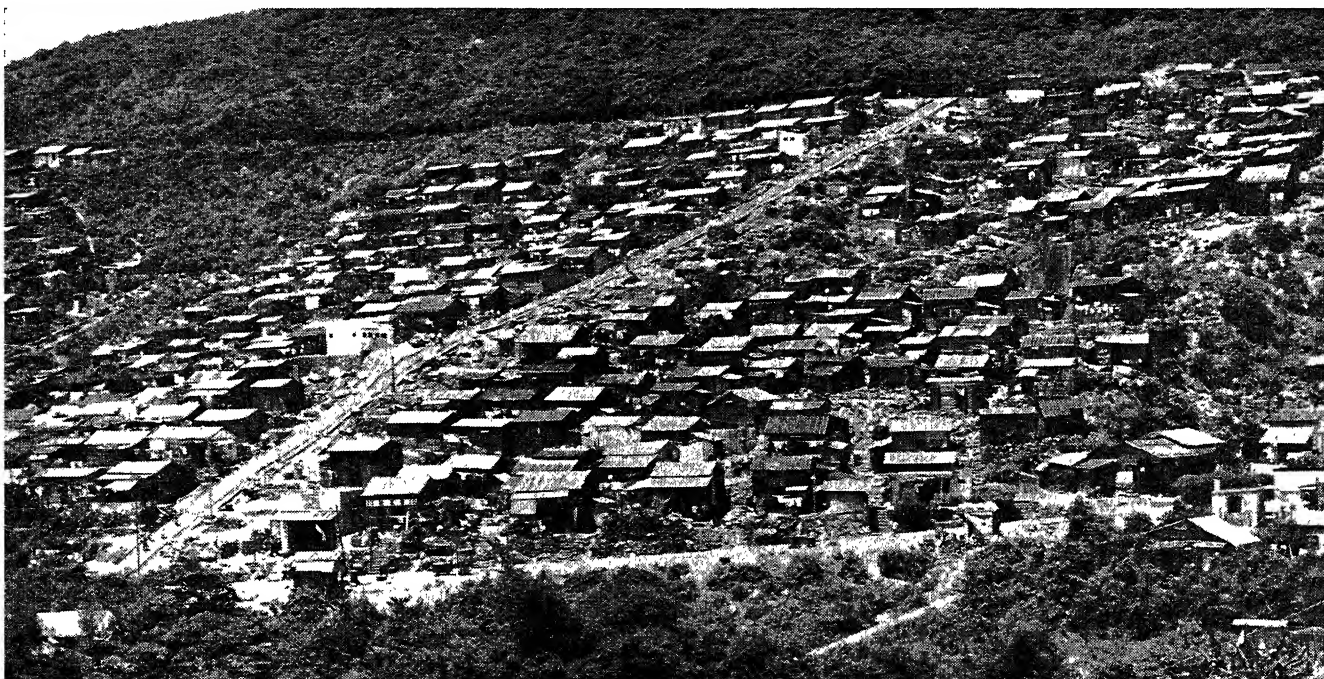
It is too early to estimate whether the policies of decentralization in India have been successful in checking rural-urban migration. Even assuming that they have been partially successful, one may question the appropriateness of rural industrialization on economic grounds. There is the possibility of wasting scarce economic resources on plans for rural industrialization. On the other hand the big cities offer many facilities for the setting up of new industries. "The large cities seem to

provide the conditions essential for the rapid accumulation of capital, the stimulation of industrial entrepreneurship, and the creation of the institutions that foster industrial growth. Apparently, once this process is underway it tends to stimulate itself. . . . Economic process seems to work in the direction of further bolstering of centres where there is already a clustering of industry or commercial activity."⁸ The major argument against industrial concentration in big cities is the mounting overhead cost which increases disproportionately to the growth of urban population.

The industrialization of villages or big metropolitan cities is, however, not the only alternative to an urban-industrial pattern. New towns can be developed, either at selected rural areas or near big cities. We may call the former type independent towns and the latter satellite towns. Independent towns have certain advantages: cheap land with maximum freedom to plan its future use, and little or no transportation problem within the community. Living conditions are very often excellent in these towns. At the same time there are disadvantages also. All the essential facilities—housing, transport, employment, utilities, etc.—must be provided at the start. Examples of such towns in India are Chandigarh, capital of the Punjab and the modern steel towns at Bhilai, Durgapur, Rourkela. In all these towns the urban facilities were provided by the Government, and the cost per family was quite high. The major item in the cost

⁷ Government of India, Planning Commission, *Report of Village and Small Scale Industry Committee* (New Delhi, October 1955), p. 22.

⁸ William Bredo, "Industrial decentralization in India" in *India's Urban Future*, Roy Turner, ed., op. cit.



Chai Wan refugee resettlement area, Hong Kong

Limited public controls and improvements, evident in the clear boundaries and stairways, suggest an environment "structure" which raises the level of "improvability" of the settlement



Credit: United Nations photos



Credit: United Nations photos

was that related to the provision of employment. Housing was cheap, at least compared to that in big cities.

The success of new towns such as Chandigarh or Rourkela depends to a large extent on the possibility of providing local employment. Chandigarh was built as a capital. Therefore, there was little difficulty in finding employment for the new residents; in fact most were already employed before moving to the new town. In Rourkela, Durgapur, etc., the steel mills provided employment opportunities. The availability of employment and the provision of urban facilities from the top ensured the success of these towns. According to the 1961 census Chandigarh had a population of 89,000, Rourkela 90,000, Bhilai 86,000, and Durgapur 41,000. Satellite towns have some advantages over independent new towns. The nearness of a parent city helps overcome initial difficulties by offering the inhabitants employment opportunities. The overhead cost of housing and utilities

is likely to be less than in the big cities. Thus the development of satellite towns around big cities offers much scope for taking the locational advantage of the nearness of the city and at the same time reducing the overhead cost of improving urban facilities. Experience with planned development of satellite towns as a means of tackling urban population pressure in big cities is lacking in most countries. In India, in the course of rehabilitating the displaced persons from Pakistan, a number of satellite towns were developed. The most important among these towns is Faridabad near Delhi. Faridabad in 1941 was a small town of 6,000 persons.

Following the settlement of refugees, the population grew to 51,000 by 1961. Initially there was difficulty in finding local employment, and the nearness of Delhi must have been an important factor which made Faridabad overcome these first economic difficulties. On the whole the experience with Faridabad has been a success.

(Top left) Roof squatters in Kowloon, Hong Kong

These multi-storey structures, which would normally indicate a level of wealth and public or collective control to maintain housing standards, have evidently been inundated by masses of refugees which create abnormal pressures on the extremely limited land area in Hong Kong

(Lower left) Housing contrast in Kowloon, Hong Kong

Three distinct examples of (a) uncontrolled building, (b) one-storey resettlement estates, and (c) permanent high-rise apartments are dramatically juxtaposed. Maximum building intensity applied in all three cases symbolizes the pressures and limited resources which are a part of the urbanization process in many countries

Part two

THE DEVELOPMENT PROBLEM

METROPOLITAN PLANNING AND DEVELOPMENT*

Most countries are faced today with problems of rapid urban growth. But in many less developed countries a disproportionate use of the limited resources to repair existing social ills at the expense of an increase in industrial and agricultural productivity would result in a further deterioration of the national standard of living. The Governments of these countries are thus confronted with the difficult task of dividing their limited resources between the immediate improvement of the environment, and investment in productive projects designed to achieve long-term social and economic gains.

As of 1950 about 21 per cent of the world's population was already living in cities of more than 20,000. But this per cent varied greatly, as the following figures indicate.¹

<i>Geographic area</i>	<i>Urban population (per cent)</i>
Oceania	47
Northern America	42
Europe	35
Soviet Union	31
South America	26
Caribbean and Central America	21
Asia	13
Africa	9

Everywhere urbanization continues, and in most developing countries, both rural and urban environments are deteriorating under the impact of the population movement. Physical congestion and blight affect vast areas, and often appear to defy efforts towards improvement: they present extraordinarily difficult problems of planning, organization and financing. Many people remain slum dwellers and fail to become integrated into the wider urban community and its institutions. These problems also exist in some countries with more advanced economies.

It is notable that in most developing countries there tend to be at least one relatively large metropolitan area whose growth rate exceeds both the general urban and total population growth rates. Sometimes its population is five to ten times the size of the second city in the

country, creating serious over-concentration of urban development.

Available evidence indicates that the phenomenon of metropolitan growth and its attendant difficulties will become progressively more serious in the immediate and foreseeable future in most countries of the world. Yet, it must be understood that while there are many problems and difficulties of metropolitan growth and development, urban growth is both desirable and inevitable. A high degree of urban development is a necessary basis for further development and progress of society. Also, new possibilities exist in the rural areas. In any case, society can and must find suitable patterns for the distribution of the world's ever-growing population.

The total impact of the city is not a negative one, as the city leads the way for progress in industry and in levels of living and culture. An ultimate aim of regional planning is indeed to eliminate existing disparities between town and country. The great challenge is the need to mould a socio-economic-physical environment which is in all ways worthy of the potentialities of the highly industrialized society of the future.

MAJOR ASPECTS OF METROPOLITAN DEVELOPMENT

The variations of characteristics and trends in metropolitan growth and development reveals that no one model for development is applicable to all situations; that a constant interrelation exists between all aspects of urban growth; and that these must be viewed as a whole before any realistic planning development can take place.

While metropolitan growth is universal, there are significant differences in its causes, attendant problems and difficulties, and in its prospects. An industrialized country may be particularly concerned with urban renewal, metropolitan congestion or traffic problems, while a less developed country may be primarily occupied with mass migration of unskilled labour from rural areas, and with the best allocation of available resources. Clearly in both cases a national policy is needed to deal with these problems.

To be successful, government policies must adopt a comprehensive approach. Physical planning requires appropriate co-ordination with the social and economic aspects of development. Furthermore, metropolitan planning, as a continuous process, needs integration at all successive stages before it can develop in harmony with its region and with national goals and policies.

* Adapted from "Metropolitan planning and development", part one—"Report of the Group of Experts on Metropolitan Planning and Development", held in Stockholm, Sweden, 14-30 September, 1961 (ST/TAO/Ser. C/64).

¹ United Nations Educational, Cultural and Scientific Organization, *Urbanization in Asia and the Far East, Proceedings of the Joint UN/UNESCO Seminar, Bangkok, 8-18 August 1956* (UNESCO, SS.57.V.7 A), p. 98.

A major impetus to metropolitan growth comes originally from the externally-oriented sectors of the economy, which cater mostly to the needs of the region and the nation. In the search for economies of scale, many types of manufacturing tend to grow to very large size. Inter-industry linkages and the search for external economies tend to bring groups of industries together into complexes. The presence of numerous industries creates a demand for directly supporting services—such as those supplying legal, accounting, financial, research and repair facilities. The existence of these, in turn, attracts new investment. Meanwhile, specialized administrative and other services, seeking locations central to the populations they serve, are drawn into the metropolitan complex. Construction grows apace. The available labour force tends to increase in anticipation of economic opportunity and cultural and social amenities. To some extent, further growth is attracted because of the availability of labour force, thus giving further upward twist to the spiral.

In the Union of Soviet Socialist Republics, economic development is the basis for and means of guiding the distribution of industry and the over-all improvement of agriculture. It is also the basis for resettlement policy, control of the growth of large cities, and, at the same time, the development of middle and small-sized towns, as well as for the gradual transformation of collective-farm villages and localities into enlarged urban settlements well equipped with permanent dwellings and adequate public utilities, cultural, social and health facilities.

If efforts are to be made to hold urban population expansion within given limits, these efforts necessarily entail consideration of the amount and kind of activities to be carried on within the area, together with efforts to divert some activities to other areas. Particular attention should be given to two economic aspects of the question of metropolitan scale: one is the disproportionately high ratios of employment to population which exists in metropolitan areas; the second is the increasing cost of serving urban areas as their size increases.

First, because of the influx of young adults to the large urban centres in search of employment, the proportion of population gainfully employed in these centres tends to be disproportionately high. Even though the unemployment rate in metropolitan areas may be higher than average, the proportion of population which is gainfully employed is also larger than in smaller urban areas and rural districts. At the same time, the size, characteristics and potential productivity of the labour force in smaller urban and rural areas are correspondingly limited, leading to lower *per capita* income. As a result, *per capita* income is greater in the metropolitan areas than elsewhere, and this fact acts as a magnet to stimulate still further in-migration.

Secondly, larger metropolitan populations require higher investment *per capita* in transport, utilities, community facilities and social services, off-setting or even negating the higher level of economic activity. It is widely observed that the capital and operating costs of a

metropolis increase markedly beyond a certain level of population and estimates of this vary from about 200,000 to 1 million. Similarly, the national allocation of scarce resources other than money and credit are involved. Where steel, cement, energy, or skilled manpower are limited, these shortages must be taken into account, as their use in an overgrown metropolis would be less efficient than in one of smaller size.

A major economic and administrative problem concerns the allocation of space required for community facilities, transport and housing in any urban area, especially in those economies where most urban land, other than that in streets and parks, is privately or institutionally owned. When such land is required for development schemes and other improvements, its cost can add materially to the difficulties of community growth, particularly where there is speculation in land values. Efforts are now being made to circumvent these difficulties. They include Stockholm's advance purchase of tracts of land in both the suburbs and in city centre, the Norwegian Expropriation Act of 1946, the nationalization of urban land in Yugoslavia and other legislation in many countries—all designed to encourage desired development, curb speculation and reduce unearned profit. Where the necessary land policies are not developed, the economic problems of urbanization will be immensely more difficult and expensive to solve.

The social problems caused by rapid urban growth place a particularly heavy burden on limited social services. Many cities are not integrated urban entities, but are rather rural agglomerations containing people who have been attracted to an urban setting for a variety of reasons, and who are essentially without resources. Thus, urban growth frequently lacks the amenities and services that life in an urban setting demands. As a result, overcrowded squatters' settlements and shanty towns with makeshift houses are springing up around many cities in Africa, Asia and Latin America. While their existence demonstrates the ability of the people to build with very little, and of their determination to claim the right of shelter for their families, there is as yet relatively little constructive channeling of these forces by Governments to bring about steady improvement. Without close government encouragement, co-operation and strategic assistance the settlements cannot raise themselves above shanty towns, and must one day be demolished at tremendous social and economic cost.

Apart from its intrinsic value, social development is beginning to be considered as basic to economic development, though it is not comparable to such economic overhead projects as transport, communications and power. Increasingly it is recognized that provision of adequate housing and community facilities must precede or accompany resource development if serious obstacles to economic progress and the high social costs of haphazard urbanization are to be avoided.

The main issue is how best to meet the human problems which arise while utilizing limited resources to create proper balance between economic and social investments. To achieve the social objective, develop-

mental programmes must be designed to (a) strengthen the existing community services; (b) assist incoming migrants and their families to adjust themselves to metropolitan life; and (c) prepare the metropolis and the smaller city for an evergrowing stream of migrants from rural areas.

The main difficulty in dealing with metropolitan growth is that national and local government in most countries have not visualized the metropolitan area as such as a problem for legitimate government concern and that local administration is usually divided among several municipalities within each metropolitan area. Various programmes are each entrusted to an independent arm of administration, without co-ordination of the work which is indispensable for their success. As a result there are many gaps between programmes at the point of impact in the local area; and there are serious time discrepancies.

The difficulty seems to lie in an inability to recognize fully that the physical, economic and social aspects of life in a metropolitan area are now so closely interlinked that no programme can possibly succeed unless it is intimately related to all programmes. Administrators must also recognize that each metropolitan area constitutes a single unit, both for planning and administration. This unified planning must include all governmental programmes, central or local, which have an impact on the size, settlement pattern, land use, transport, economic and social activities and common services of the metropolitan area. The objective is to make the metropolitan plan comprehensive of all human interests involved.

One important administrative step which must be envisaged from the start is the objective evaluation of the results achieved as the plan is progressively realized. Responsibility should be not only to keep in focus the inter-relations of the total programme, but also the objective achievement and continuous updating and extension of the plan.

COMPREHENSIVE METROPOLITAN PLANNING

The term "plan" in the present context may be expressed in two parts:

(1) A model of an intended future situation covering (i) specific economic and social conditions; (ii) their location; (iii) land areas required; and (iv) the structures, installations and landscape which are to provide the physical environment for these activities;

(2) A programme of action and predetermined co-ordination of measures, formulated with a view to achieving the intended situation.

Economic and social planning, as well as physical planning, comes within the scope of the above definition, and involves balancing various economic and social factors of development to achieve a high total production and a corresponding rise in levels of living, while creating a condition in which the values of a society can best be expressed.

Physical planning involves developing and changing the physical environment for a predetermined arrangement of land and resources to facilitate economic and social development. Metropolitan planning finds its major expression in physical planning.

For convenient reference the economies of different countries were classified into three groups: (a) private enterprise economy, relying primarily on market mechanisms for economic development; (b) centrally planned economy, relying on state investment according to a national plan; (c) mixed economy, partly a private enterprise economy but with (i) a substantial planned public sector and (ii) state control of the private sector.

Each of these types of economic systems provides different frameworks within which the physical plan can be established. In a private enterprise economy, the framework consists largely of projections and controls, whereas in a country with centrally planned economy it consists of planned programmes.

Physical planning proceeds in stages and results in several distinct but related plans. A distinction is usually made between generalized plans, variously called over-all, general, comprehensive or master plans, on the one hand, and more specific and detailed development plans, on the other. These often coincide with several stages of planning. The first stage is a general plan of a regional area for a relatively long period in the future. This plan should be based on schematic economic plans and demographic projections for the region, along with an explicit statement of goals.

The second level should be a relatively more precise plan for the metropolitan area. On this level of planning, which is still long term, land use could be shown in some detail, including such community facilities as parks, playgrounds, schools, libraries, hospitals and health centres. An accompanying capital investment programme should indicate probable public investment. These plans should be reviewed periodically.

Then more detailed plans are necessary to supplement the generalized plans. These include sub-area or neighbourhood plans and urban renewal plans. Also required in greater detail are plans for highways and facilities and utilities. In some countries, particularly in Canada and the United States, zoning ordinances provide the primary legal foundation for the control of land uses, densities, heights of buildings and set-backs. With an officially adopted "city map" which defines the streets, elevations, and open spaces, the two ordinances together provide the primary statutory foundation for enforcing a comprehensive city plan and afford the city authorities the opportunity to develop five- to ten-year capital programmes.

Lack of integration between physical and economic plans often results from the national government's preoccupation with economic problems. Targets are usually set for levels and patterns of investment, income, output and employment. These economic decisions necessarily affect the location of industry, the distribution of population and patterns of land use. But little attention

is paid to these matters. Questions as to what scale or pattern of urbanization would best promote economic and social objectives receive little attention.

If national planning authorities, who are principally concerned with economic questions, pay insufficient attention to the regional and local implications of their work, regional and local planners, who are principally concerned with physical questions, tend to have equally serious limitations in the opposite direction. What is needed is the establishment of better channels of communication between national planning and regional and local planning, a better knowledge of national socioeconomic development on the one hand, and specific physical implications in particular areas on the other.

Severe limitations exist in those countries where immediate and foreseeable needs far outstrip available and foreseeable resources. But, in setting their proposals, planners aim at high eventual standards without divorcing themselves from immediate realities. They must also search for methods of mobilizing latent resources such as demonstrated in community development techniques.

Whatever the level of resources, it is clear that an adequate approach to planning for metropolitan development cannot involve only local considerations, local jurisdictions and local action. Consequently, increasing thought is being given, particularly in the larger and more developed countries, to central co-ordination of national agencies responsible for such important elements of urban development as housing, urban renewal and highways. As yet, though, little attention is being given to such questions as the mutual relationship of these programmes; the co-ordination of financial and technical assistance from the agencies for planning in given areas.

To give general guidance to regional planning, it is desirable that intermediate level government authorities covering the region, of which the metropolitan area is a part, should have over-all planning agencies.

While it is true that metropolitan areas are intimately related to national economies, it is also true that the inhabitants of the metropolitan areas themselves have

the most direct and immediate stake in the area as a place to work and live. And since the local authorities are the most interested in effective solutions to local economic, social and physical problems, effective administrative machinery with adequate financial resources should exist within the metropolitan area itself.

Ideally, metropolitan area development can be most effectively pursued under the ægis of a unified metropolitan government. In such cases metropolitan jurisdiction extends, in addition to planning and land use, to such matters as wholesale water supply, wholesale sewage disposal, main traffic arteries, mass transportation, industrial and tourist development, smoke control, civil defence and assessment, as well as to certain aspects of, for example, education, health and welfare, housing and slum clearance and the provision of parks and recreational areas. Local jurisdiction—exercised by the numerous municipalities in the metropolis—is retained in such functions as local water distribution, garbage collection, local streets, tax collection, fire and police protection, libraries, and local aspects of education, health and welfare, housing, slum clearance and recreation.

Whatever arrangements are made for the conduct of metropolitan government, there should be a permanently staffed area-wide planning agency. Such an agency can be (a) a branch of the central national planning board (as in France); (b) attached to a metropolitan government (as in Toronto); or (c) a joint body for all the municipalities in the area (as in Stockholm).

In view of the complex involvements underlying effective planning, the policy board of the planning agency should include representatives from national, regional and metropolitan levels of government, as well as from the local governments. Technical planning supervisory committees should also be established to assist in laying out the general work programme and in dealing with such areas as water, transportation and housing problems, preparing special reports and proposals. In all activities of the agency, whether policy-making or technical, the theme should be inter-functional, inter-agency and inter-jurisdictional co-operation for the benefit of the area as a whole.

PLANNING FOR NEW TOWNS*

NATIONAL POLICIES FOR ESTABLISHMENT OF NEW TOWNS

Participants at the Symposium on New Towns felt it was desirable to consider new towns as an instrument for the development of a national policy for urban and regional development. Unless physical planning concepts and processes were effectively integrated with economic planning concepts and processes, it might not be possible to ensure the provision of a minimum desirable physical environment for human needs and welfare. New planning techniques would have to be evolved within this integrated framework. A multi-disciplinary approach incorporating the social sciences, architecture, engineering, city and regional planning and other related disciplines would be necessary.

The need for a more comprehensive approach to national planning was considered especially important in the case of developing nations. Many of those nations have set up national economic planning machinery but do not fully recognize the spatial and locational aspects of economic growth. It was felt that developing countries were generally likely to benefit from the creation of a physical planning division or department within their national planning organizations. Joint formulation of regional and economic policies, plans and goals would also be essential for setting up more pragmatic and realistic national policies and projects. Physical plans and programmes for regions and new towns should be prepared within the framework of these national and regional plans.

For the sake of convenience, the national policy for urban development can be examined from the vantage point of population distribution policies and resource development policies. New towns programmes can also be examined on this basis.

One objective of population distribution policies is to decongest large metropolitan areas or to reduce their rate of growth in comparison with the rate of growth in other cities and regions. New towns can help implement this objective by establishing relatively self-contained and comprehensively planned cities in the regions surrounding the great metropolitan areas. New towns can also be built in more remote areas. In that case, they can serve another objective, that is, encourage other urban foci and growth points in the national economy as well as direct population off the land or away from the congested metropolitan areas.

In the view of most participants, there was little ground for the belief that new towns, whether at close or distant locations from the metropolitan areas, would prevent the growth of the metropolis. But such new towns might help to eliminate congestion within the metropolitan areas, and also help to reduce the rate of growth of the giant metropolis in comparison with other regions.

There were indications (questioned by some) that construction costs were particularly high within large metropolitan areas. The development of new towns within commuting distance of centres of such areas was likely to be more successful, especially if the costs of construction were approximately equal to, or below, those of the parent city. Some participants stated that relatively self-contained satellite towns near a metropolis were likely to have a higher growth potential than isolated new town projects and therefore presented decided advantages, particularly in speed of construction and development.

Great importance was attached to the planning and building of new towns as a means of promoting economic development. Such towns would not only accommodate new activities but could encourage and reinforce the incentives for such development, especially in the less developed or backward regions of a country.

Industrial estates can provide impetus in attracting industry to new towns. Industrial areas may provide infra-structure facilities (improved plots with streets, railroad tracks, utilities and sewers, etc.); services and facilities (assistance in building, training and hiring of labour); and fiscal, financial and tariff incentives. It might often be desirable to provide such inducements while placing restrictions on new industry in the most highly industrialized areas. "Foot-loose" industries might thus be attracted. For small-scale industries, standard factories could be built in advance to help stimulate their growth. A diversified industrial structure would thus be achieved.

Building planned new towns is often the only way to develop space-bound natural resources, such as iron and steel, coal and other resources. New towns in developing countries are predominantly of this type. Because of the shortage of resources and the urgent need for economic development, it was not surprising that such developments should receive higher priority than the deconcentration of overcrowded urban centres, in spite of the acute need for the latter.

* Adapted from the *Report of the United Nations Symposium on the Planning and Development of New Towns*, Moscow, 24 August-7 September 1964 (United Nations publication, Sales No.: 66.IV.3).

The Symposium further affirmed that the need for a diversified economic base was imperative in towns of all types. This recommendation applied to the new capital cities, as well as to new towns built to develop resources or decongest metropolitan areas.

Improved industrial sites and services and incentives often help to attract large-scale and medium-sized plants. In the last analysis, however, it appears that such inducements are effective only secondarily, since they usually relate to a relatively small part of total plant costs. They would influence selection of location only after the manufacturer had been satisfied that he could fulfil his primary location requirements of markets, materials or labour. Thus, these factors should always be given serious attention.

In many developing regions of the world, massive migration patterns, often in anticipation and even in advance of job opportunities, lead to vast squatter settlements. New towns in developing regions are likely to attract such migrants. Reception areas as well as land, building, social and physical development policies would have to be devised to accommodate such low-income families. Provision of basic services and facilities and satisfactory space standards might be all that could be provided at the early stages of development. But if these conditions are realistically taken into account, friction and social problems could be reduced. When more resources become available at a later stage, it would then prove easier and more economic to develop these areas to higher standards.

In new towns involving resource development, housing and other essential services are considered as important elements of industrial and agricultural projects—a part of the total investment programme. Similarly, when bilateral or multilateral aid is given to the less developed countries, such aid should provide for the building of housing and auxiliary services as part of the total investment, rather than as a separate social service.

PLANNING AND CONSTRUCTION OF NEW TOWNS

The goal of town planning is the creation of the most favourable conditions of life for all the population. New towns should ensure the best possible environment for the population at work, at home and at leisure. A new town should also be a symbol of social and technical progress and must be founded upon sound principles of design and economics.

United Nations meetings and reports have repeatedly noted the lack of close relations between physical planning and the national planning of a country. A United Nations survey on social development stated that "Town planning in the past has often been limited to the spatial or architectural aspects of city growth, and has thus suffered from a certain artificiality and impracticality"¹ which has prevented many plans from being carried out.

¹ *International Survey of Programmes of Social Development* (United Nations publication, Sales No.: 59.IV.2), p. 189.

It is essential that new towns should be integrated into a comprehensive regional plan. The site should be selected to ensure a favourable micro-climate, good drainage conditions, a suitable subsoil, etc. The topography of the area should facilitate the most rational distribution of the population and buildings envisaged, as well as possible future expansion. The plan should enhance the area's physical attributes and bring about an organic relationship between the new city and its natural setting.

It is essential that the plan for a new town not only provides for optimum conditions of work, life and recreation for the population, but also that it allows for growth and change. The basic elements of the plan include the industrial estates, the residential areas, the town centre, the recreation and park areas and a transport system. The transport system should harmoniously blend and relate these basic elements, and adequate land should be reserved for the unanticipated expansion of these uses.

The industrial sites. Most new towns are industrial centres, and their layout is greatly affected by the location and organization of the industrial sites. The fundamental principles for the siting of industrial enterprises are: grouping together compatible enterprises in industrial districts or estates for common construction and use of road and other transport facilities; civil engineering works; the supply of power, heat and water; and a sewerage system, as well as for purposes of construction and storage and the use of auxiliary establishments. Secondly, industries which do not emit offensive smells, smoke or noise should be sited as close as possible to the residential areas, but arranged so that industrial traffic cannot invade residential areas.

The residential areas. There appears to be almost universal agreement among town planners that new towns should be composed of repeating elements consisting of groups of dwellings, plus the community and cultural facilities in daily use (primary and nursery schools, food stores, etc.). These residential neighbourhoods offer the best starting points for community development, and are therefore a social as well as a physical planning concept.

Ever since the neighbourhood unit idea was first formulated in 1929, experts have discussed its optimum size. These estimates range from 3,000 to 20,000, with a norm around 6,000-12,000. Proponents of the smaller size claim that it is more cohesive and offers more intimate contacts between the inhabitants. In the opinion of others, at least 15,000 to 20,000 people are required to support an effective and varied neighbourhood centre. Neighbourhood size is often related to school sizes.

An intermediate scale is a residential district, composed of a group of neighbourhoods, and including those institutions, services and amenities that are visited by the public frequently, but not necessarily daily, such as cinemas, clubs, health clinics, shopping centres, etc. These facilities should be sited within easy walking

distance of all dwellings they serve. The size of the units tend to vary from country to country according to local conditions of climate, standards of living and customs. Such districts are unlikely to encompass more than 60,000 persons, even when multi-storey apartments are used, as long as adequate community facilities remain within easy walking distance.

These neighbourhoods and districts can be relatively stable elements in a dynamic and changing urban environment, provided that they meet these conditions: (a) isolation from through traffic to permit their functions to develop independently of those functions which are related to the main transport lines; (b) satisfaction of as many needs as possible within these living units, thus eliminating the necessity for frequent journeys beyond it; and (c) insulation from external influence and nuisance by buffers such as major thoroughfares, playing fields, parks or parking areas, along the neighbourhood's borders. Even the residential districts must be so designed that the pedestrian remains in control, able to walk safely to the school, the playground and the park. Cars should be limited within the district by means of streets designed for slow speeds.

It is sometimes said that neighbourhood planning has lost its importance, because increasing ease of transport has enabled people to develop many relationships irrespective of physical neighbourhood boundaries. None the less, neighbourliness continues to have meaning because people in urban areas have always tended to develop two patterns of social contacts, those based on geographical proximity and others based on relationships between those of similar interests.

The town centre. The town centre contains administrative and business offices as well as major shops, theatres, exhibitions, museums, etc., and in most larger towns are usually reached by public transport. The town centre is of crucial importance for the initial development of social consciousness and pride in the new town and for the community's future economic stability. The aesthetic significance of the town centre is particularly important, as this core is the focus of public celebrations, demonstrations and fêtes, as well as the political, social and economic activity.

The staging of the construction of the town centre can present many difficulties. During the early period of development, the new town cannot support the size, quality or variety of shops and public facilities that it will need. Furthermore, unless safeguards are exercised, one or more of the neighbourhood shopping centres may burgeon into the principal centre, or these local centres, by dividing the market, may inhibit the growth of the central business district. The preferred strategy is to keep the commercial growth of the local centres to a minimum during the early years and to encourage the building of the principal business centre as early as possible.

There is also the problem of rapid structural obsolescence and the need to ensure flexibility in long-term planning. One way of establishing a centre that from the outset provides a quality of activity and bustle and

yet is free to expand and change is the use of flexible, multi-purpose structures which can be easily adapted to future needs.

The recreation areas. The larger parks and sports centres are often located as part of a green belt on the periphery of the town, and landscaped green wedges retaining and enhancing existing features of the natural landscape should also penetrate inward to the town centre. Apart from these major provisions of public open space, tree planting and green spaces should also be provided within the residential sectors to create favourable micro-climatic conditions, areas for repose and with play spaces for children. In many parts of the world, the people spend a great deal of their time outdoors, and favourable micro-climate conditions can assume great importance. Also, convenient location and appropriate design of different types of public open space are usually much more important than maintenance of theoretical standards of acreage of open space per 1,000 persons.

Transport. Provision for transportation within the town should ensure safety both for the motorist and for the pedestrian, as well as speedy and comfortable movement. Preventing traffic problems can be achieved by making direct connexions from the residential areas to the places of work and to the town centre, by designing roads for different forms of transport, by the separation of pedestrian from vehicular traffic, especially along routes used by children, and by emphasis upon public transportation.

Transport planning is based upon the principles that residential areas should be accessible to employment, in time and cost. The crucial problem concerns the extent of use of private cars. As the percentage of commuters by car goes up, costs increase. Thus, the question is posed of how much we should spend in social investment for public transport.

In most cases, and perhaps in all, new towns should be planned with an emphasis on the use of public transport. There should be adequate provision for the use of cars for exceptional journeys and for family recreation. Public transportation can be provided by bus, subway, conventional railway, elevated or at ground level, or by monorail. Each system has a place under different circumstances and must be evaluated within the appropriate context.

The success of any public transportation system depends on its popularity, that is, its cost, convenience, speed and comfort. Some countries, such as the Soviet Union, are considering making all public transport free. Attractive and efficient public transport may be expected to reduce the problems posed by private automobiles. Nevertheless, with large-scale increase in automobile ownership, some means (such as taxation or licence) of limiting the movement of cars to certain areas of the town will have to be introduced as an alternative to prohibiting the private car altogether. Measures might include the more widespread use of efficient "shared" taxi services and car-hire facilities.

Ideally, the first inhabitants of a new town should

enter a city that is fully equipped with public utilities and community services. This ideal is not generally feasible. With proper planning and long-term financing, it is feasible to hold off house building until at least the minimum system of primary public utilities has been soundly constructed on a permanent basis.

Economies can usually be effected by phasing the construction of utilities. In countries with limited capital resources water services could be terminated with community taps, with subsequent extensions into separate dwellings when the town becomes more prosperous. Pumping plants, treatment works and even water mains can often be economically installed at less than their planned capacity, and be enlarged as the population grows.

At all stages of planning, attention should be given to co-ordinating the sewage collection and disposal plan with the land-use plan. Land-use controls should be co-ordinated with the local sanitary regulations. Health authorities should take special measures in areas where the land development is likely to precede the construction of a permanent sewer system.

A strong case can be made for the industrialization of the building industry wherever new towns are being undertaken. In the view of the Symposium, industrialization of the building industry includes the prefabrication of housing components (large and small), the development of new structural materials and of improved methods of assembly on the building site. In the Soviet Union, the large wall panel method of construction reduced construction cost by 15 per cent. Such a programme requires the development of a house-building factory and of convenient roads from the factory to the construction site.

Furthermore, a long-range housing programme can be effective only when the public agencies are empowered to set policy on standardization and modular co-ordination and are able to provide the necessary funds for the development of the construction industries. In developing countries there should be full use of local building materials and employment of wide sections of the population to assist in construction. The use of lighter and cheaper building materials should also be explored for the building of new towns.

The increase in construction work necessitated by a new town may present a developing country with grave problems of obtaining additional building materials and the necessary technical personnel. A plan to meet these requirements must be part of the policy-making for new towns.

In conditions of severe shortage of skilled personnel and building materials or of urgency caused by a sudden influx of immigrants, priority in construction should be given to community structures. Minimum social services should always be provided from the outset. These should include schools, neighbourhood shopping centres, a medical centre and a public meeting place.

In countries with free or mixed economies, the means of land acquisition may well be the factor on which a

new town policy fails or is unduly delayed. To avoid speculation in the acquisition of land, it may be necessary to consider such devices as the freezing of land values, taxation to enforce land use in accordance with the plan or public acquisition of the site.

The design of a town, its size, location and the quality of its facilities affect not only construction costs, but associated maintenance costs. Two-level shopping centres and tall buildings, for example, cost more to construct and operate than ground-level shopping centres and low buildings. Up to a point, increases in town size bring greater returns and, hence, lower costs. But as the town size continues to increase, the length of haul of passengers and goods and the length of service connexions increase proportionately more than the size and the advantages of large-scale building tend to be reduced and perhaps more than offset. In such circumstances, a higher density of development, even at extra cost, may be cheaper in the long run than low density, because of a saving in hauling and travelling costs.

The greater the provision of facilities and the higher their quality, the greater the cost. If housing proves too expensive in relation to the income of the people for whom it is provided, it may have to be subsidized, or paid for by the tenants at the expense of other needs, or it may not be used to its best advantage, causing families to double up to reduce costs. It is important, therefore, that the scale and quality of housing and community facilities should match the income of the people for whom it is intended, or the resources of the community.

SOCIAL ASPECTS

New towns are being constructed in countries with widely different social, economic and political systems. As positive instruments of social and political action, new towns should assist in creating the type of society the nation desires. Town construction should be developed actively and purposefully to provide the most favourable living conditions and assure social progress.

New towns are not isolated. Some constitute satellite nuclei of large conurbations, but all are centres belonging to the national—and sometimes continental—system of towns distributed over the entire national territory. New towns should therefore be considered within the framework of a national policy of distribution of the population, an organic system of human settlements, which every country should design to allow its economic, social and political forces to function effectively.

New towns are powerful tools in the construction of a new society consistent with modern urban civilization and emergent technology. However, in some developing countries the provision of housing and social services has lagged behind geographic concentration. One illustration is the squatters' settlements surrounding many cities. New towns present one means to overcome these conditions.

Then, too, the process of settling in new residents of a new town must take account of the institutions that they bring with them. Traditions should be considered

carefully; for example, how to deal with differences of caste, religion, language, race and the status of women.

In planning for social services, the town should be considered in relation to its region. As far as possible, studies should identify the areas from which the new town will draw its people. If prospective residents of the new town could be identified in advance of resettlement, steps could usefully be taken in their original urban or rural environment to prepare them for life in the new town. Community development is applicable to new urban communities, especially in the preliminary stages of new town development. Urban community development should stress citizen participation and mutual assistance, promote leadership, and develop self-sufficiency.

It is always desirable to provide a diversity of housing types, and choices should be offered between co-operative arrangements, renting and home ownership. In addition, the design of housing should prevent a monotony or drabness. In a new town where housing is built by industries exclusively for their workers, it is important that such housing is not tied to the occupant's job so that the worker is forced to move when no longer employed or when he retires.

In the one-industry new town, social life is constrained and social intercourse tends to concentrate on expressions of irritation with "the management". There are insufficient employment opportunities for all employable members of the household. Towns dependent on a single economic activity are also liable to serious dislocations arising from economic depression. In some cases other industries and activities can be introduced even into isolated towns based on extractive industry. Or, in some places, a "parent" town may be developed to serve the workers from a number of outlying mining sites. Good transport can link several towns so that one can absorb the unemployment of another.

The attainment of high architectural and æsthetic levels in new towns is also a task of considerable importance. The psychological impact of æsthetics is important in fostering a spirit of community identification, civic pride and national integration. The symbolic importance of space and physical structures should convey a sense of collective participation and personal enjoyment.

A major factor in the social organization of a new town is the organic integration of the dwelling with community facilities and services. Simultaneously, community development should be considered from the very beginning, both in terms of planning and implementation.

ADMINISTRATION

The role of new towns in the total programme of economic development and of urban settlement must be established within the broad lines of national policy. It is only thus that new towns can be used to determine the pattern of urban settlements on a national basis. Once the concept of a national policy of urban settlement is accepted, it follows that the national government must decide the number, location, character and size

of new towns and the resources to be devoted to their development during any specified period.

Other reasons for placing this responsibility on the national government are: (a) the implications of the construction and establishment of new towns for national economic, social and physical planning; (b) the demands that new towns will make on public services for which the national government has administrative or financial responsibility or both, e.g., water supply, roads, education and health; (c) the large capital commitments involved; and (d) the distribution of the labour supply.

As is so often repeated, there is an urgent need to integrate town and country planning with economic and social planning. Implementation of national economic plans will invariably have profound implications for the pattern of urban settlement. Furthermore, it is often necessary to strike a balance between the requirements of industrial efficiency and the social requirements of the population. In many countries the planning has been operating on separate lines which follow the same course but seldom meet. Economic and social planning is carried on predominantly at the national level, while physical planning is generally regarded as more regional and local. The administrative problem is to ensure that the two branches of planning are harmonized at all levels of government to achieve the most satisfactory pattern of urban settlement.

In many countries the development authority has been found to be the most satisfactory instrument for the creation of new towns. The development authority is a management device for planning, promotion, construction and co-ordination of new town building activities. It is a means of bringing together highly qualified persons possessing drive, imagination and experience in large-scale enterprise management, and enabling them to concentrate on a single task.

The authority will be responsible for detailed planning and construction or expansion of the system of roads, water supply and sewerage facilities, electricity and other public utility services. It may be responsible as well for building houses, factories, shops, offices, and public buildings. Where no adequate local government machinery exists in the initial stages of town development, the authority may have to assume responsibility for establishing and operating basic services, such as education, health, refuse disposal, street lighting and fire and police protection.

The development authority is not a representative body, and for this reason every new town should have at a very early stage a well defined administrative system. Only a locally elected council or mayor can officially express the views of the citizens. Newly established local governments may not be able immediately to assume responsibility for the full range of municipal services, but they can assume some responsibilities even in the early stages. Such duties might include the organization of recreational activities or the choice of amenities to be provided for the existing population by the development agency. The most important functions of the local

council or mayor are, first, to promote a community spirit and, second, to represent the interests of the residents before the development agency and other public authorities. To facilitate the discharge of this responsibility, the council chairman or mayor may be made a member of the development agency's governing board.

Local government jurisdiction should encompass all expected growth of the new town, and it must have sufficient power and financial resources to discharge its responsibilities effectively. A wide green belt should be secured as a protective shield against encroachment by private developers or squatters.

New town development requires trained personnel of many kinds, both for the development agency and local government, including housing and industrial estate managers, social workers and sociologists, statisticians, health experts, as well as planners, architects and engineers. Some of the devices for improving the capability of personnel include: (a) establishment of national and regional centres for research on urban problems; (b) preparation of manuals on the responsibilities of local governments; (c) use of highly qualified expert advisers to provide assistance on very broad or specialized problems beyond the competence of the town's own personnel; (d) convening of special training programmes, particularly for government officers such as mayors and councilmen, engineers and tax collectors.

From its inception, a new town development authority must appoint a chief town planner, architect or administrator on whose skill and organizing ability the success of the project will depend. The person in charge of town development must have a broad background, enabling him to deal with the many-faceted elements of new town building, and he must be assisted by advisory committees composed of town planners, architects, social scientists, medical personnel and other experts.

Many developing countries have found it difficult to induce competent experts and senior officials to leave the large cities. The major decisions will inevitably be political and will be made by officers or bodies possessing political authority. But political leaders cannot be expected to understand all the complex technicalities of the planning process. It is the planner's duty, therefore, to enable the political authorities to understand the characteristics, advantages and disadvantages of particular plans for a new town.

Special efforts must be given to the achievement of a high degree of co-ordination. Horizontal co-ordination is required between all agencies, while vertical co-ordination is equally necessary among the different governmental levels. Co-ordination is facilitated if all ministries concerned with planning have the same regional areas for their administrative purposes, with offices located in the same city, and if these areas correspond with the areas of any elected regional council which may exist.

Other administrative features important in new-town development include: (a) as the initial master plan of

the new town nears fulfilment, the development authority should hand over its responsibilities and divest itself of its property by stages to other public bodies, thereby preparing for its own liquidation. The buildings, equipment, etc., required for ordinary municipal functions, e.g., sewers, roads, public lighting, and schools, should be transferred to the local government authority as soon as practicable; (b) there was broad agreement at the Symposium that the policy of preservation of public ownership of land is so important that it should be departed from only when there is no alternative. The advantages of public ownership are: (i) it facilitates future planning and development, and (ii) it enables the public authority to obtain for the public the increments derived from land values as they increase over the years. Commercial land especially should be retained in public ownership, avoiding chaotic land speculation.

NEW CAPITAL CITIES

In countries with low *per capita* income, including those which have recently gained independence, some of the most important problems concern the creation of a national identity and economy. A unity of purpose must be developed among the separate and often antagonistic political interests of the country. The creation of a new capital can be a tool to solve some of the above problems. Moreover, a new capital is basically a new city created to fulfil specific functions within a national plan. A national capital has a symbolic meaning, and can serve as a rallying point of the nation and a focus of national pride.

The selection of the area for the capital city is of great importance, for this will affect the development of the country as a whole. The location of the capital will bring about a shift in population distribution and changes in economic, social and cultural activities. Therefore, the capital city should be developed within a comprehensive national plan.

The transfer of the national capital to a new site need not necessarily involve the establishment of a new city. Enlargement of an existing city might solve innumerable problems such as the provision of housing and community facilities for construction workers, transport links and terminals with other major cities, and social facilities for the gradual integration of newcomers.

A capital city is the focus of the political and administrative life of the country and, at the same time, it must serve as an economic, scientific, cultural and educational centre. Recent experience in the founding of capital cities indicates that unfavourable economic and social conditions prevail where a wide productive base is lacking. Particularly a strong building industry will be an important element in the functioning of a new capital.

In the past, town planning schemes for new capital cities have tended to overemphasize monumentality and symbolism. This is understandable, but seldom meets the functional and social needs involved for a vigorous urban environment. In particular, there is a danger of lack of proportion between the scale and character of the

planned layout and the everyday human needs of the residents. Also, the capital city is often planned in an insular way without sufficient regard to settlement in the surrounding region. Yet the symbolic importance of the capital as the main centre of the nation, the seat of government from which the nation's life is guided, is obvious. The town planning and architectural concepts must be impressive to express the importance of the capital city. Therefore, initial investment in capital cities is very high, far more costly than in an ordinary new town.

The creation of a new capital may result in a large migration from the whole country, as against regional migration to other towns. Hence, all possible care should be taken to ensure that the capital city provides conditions under which it can carry out its functions and at the same time prevent spontaneous unplanned growth

and the problems which would thus ensue. A new capital in a country having a market economy inevitably creates great expectancy among land speculators. Measures are therefore needed to ensure control of the land by public bodies. Control of land ownership should be extended to key areas of influence in the region, and strong control measures should be provided for areas not under public ownership.

The transfer of the national administration from the previous capital to the new one should be co-ordinated carefully with the construction of the office buildings, as well as housing, schools, recreation, medical services and community facilities. Once the transfer of the administrative functions has been decided and scheduled, it should not be interrupted until completed. Hesitation and slow transfer means a double capital system with inefficiency and greatly increased costs.

Part three

METROPOLITAN PLANNING

PHYSICAL FACTORS OF METROPOLITAN PLANNING WITH SPECIAL REFERENCE TO STOCKHOLM*

BO FREDZELL

The focus of this paper is the physical planning of the metropolis in the region, with major concern for the nucleus of the region, the metropolitan centre. Particular attention is placed upon the effects of the automobile on the physical form of the centre.

METROPOLITAN AND REGIONAL PATTERN

Scientific and technical development has contributed to a steadily decreasing demand for manpower in agriculture in the technically advanced countries. Urban industries and service functions are increasing rapidly, and in all Western nations have become the dominating branches of production. These call for and make possible a concentration of the population. The changes in the structure of the economy have, however, not only meant a growth of agglomerations but also a rapidly increasing standard of living, which among other things has meant increased leisure, higher housing standards and improved communications. Each of these makes an increased demand for land. The built-up area of the agglomerations has therefore not grown proportionally with the population, but considerably faster. As a whole, metropolitan centres are not so concentrated and densely built up as the cities of the last century were. They extend over a large area and often over many local government areas—they constitute conurbations.

The New York conurbation comprises 550 local government areas. The built-up area increases by more than seventy-five square kilometres a year. The population grows by 200,000 a year, most rapidly in the outer ring 40 to 80 km. from the centre. Similarly, the growth of London has repercussions on a number of communities situated up to 125 km. from the centre (e.g., Swindon and Thetford). And in the Stockholm and District Regional Plan, development areas at distances up to 30 to 40 km. from the centre are proposed.

Each service function of the metropolis has its own primary sphere of influence. The largest spheres of influence belong to the most qualified and specialized service centres, and within them are located smaller spheres of less specialized services. In principle, a certain service function is to be found in each area having a basis of customers requisite for the function.

The importance of a city's services has repercussions on the size and structure of the city centre and also on the pattern of regional development. Therefore the connexion between the metropolis and the region is highly relevant for physical planning—and for possibilities of decentralization.

The growth of towns and the withdrawal from the city centre of dwellings and industrial premises have meant that large residential areas have come into existence outside the sphere of influence of many enterprises in the city centre. Consequently, in or near these residential areas new service undertakings have been established. Decentralization of dwellings, industrial undertakings and other enterprises away from the city centre has, of course, taken place in every growing city.

COLLECTIVE OR INDIVIDUAL TRANSPORT FACILITIES

The growth in area of the large city and the increasing transformation of the city into a conurbation are made possible by improved communications. In European cities this development has been entirely dominated by public transport. During the last decade, however, the quantity of private cars in Europe has increased so rapidly that many countries must shortly cope with the same car density as the United States (see table on page 50).

When the reconstruction of European cities was begun after the war, the majority of planners and authorities looked upon the United States as an exceptional country whose car density would never be reached in Europe. Reconstruction was carried out without adjustment to the new requirements of the motor car.

However, American cities have normally been developed with the open grid pattern and the greater part of the American urban development has taken place since 1920, when the average car density in the United States was one to every twelve inhabitants and in certain states was considerably more than one to ten. Public transport facilities have therefore affected town planning in the United States considerably less than in Europe. The car has made possible a dispersion and sparseness of settlement which does not meet the concentration requirements of collective transport.

The deterioration of public transport facilities has meant that the total number of passengers carried by local traffic enterprises in the United States has steadily declined since 1945, and is now only half of what it was

* Background Paper No. 8 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

Number of inhabitants per passenger car			
Country	1 January 1955	1 January 1960	Percentage change 1955-1960
Italy	54	31	42
Finland	50	28	44
Netherlands	37	23	38
Norway	28	18	36
Federal Republic of Germany	29	15	48
Denmark	20	13	35
Switzerland	18	12	33
France	16	10	37
United Kingdom	14	11	21
Sweden	11	6.7	39
Canada	5	4.6	8
United States	3	3.0	—

SOURCE: 1955 data: *Vägplan för Sverige* SOU 1958:1;
1960 data: "Motor Traffic in Sweden 1960".

then. The result has been that public transport services have suffered a deterioration of their finances; their standards and the number of passengers conveyed have declined still further.

In European cities public means of transport are still predominant, though not always profitable. In several large cities the municipal authorities are pursuing the policy of accepting certain losses on public transport services to avoid the even greater losses which motoring is believed to cause the community.

The predominance of the motor car in the large American cities has had a destructive effect on the function and appearance of the city centre. Of course, in America there is also a consciousness among planners that serving the demands of motoring have in certain respects been unfortunate. While a part of the decentralization of retail establishments to shopping centres may be regarded as a spontaneous adjustment for the benefit of customers outside the sphere of influence of the city centre, in part it is undoubtedly due to disturbances of functions at the centre. American experts are agreed that the dominating position of the city centre as a service centre must not only be maintained but reinforced.

Such a rebuilding of an existing city centre as would be required to allow car traffic to develop unhindered within the centre is not possible. Car traffic to and, above all, within the centre must be reduced. This means that public transport must be expanded. The proposals put forward by American experts based on these principles are probably more applicable to European conditions than the measures hitherto taken in most large cities in the United States.

Yet, so far, the trend in Europe directly contradicts this lesson. It is significant that the Swedish experts, when preparing "A general plan for Stockholm" about 1950, reckoned on a future car density of one car to every ten inhabitants. In Stockholm the car density on 1 January 1950, was one car to twenty-two inhabitants, on 1 January 1955, one to every 11.5 and on 1 January 1960, one to every 6.7.

THE CITY CENTRE

The nucleus of the region is the city centre. An essential feature for its functions is the need for easy interchange between customers and enterprises. This requirement for personal contact calls for short distances as measured by time. This involves concentration. Concentration means a minimum of area.

The transport requirements are affected by, among other factors, the transport distance, that is, by the concentration (or contiguity) of functions which are related to each other. If the localization within the centre is such that the enterprises which have the greatest need for mutual contact are assigned the least distance from one another and enterprises which deal with the same types of goods are sited near one another this may possibly diminish the transport requirements within the centre. A certain differentiation of this kind has long been found in many big city centres.

Among the various means of transport, the private car is considerably more space-consuming in relation to its capacity than the present types of collective transport. For the conveyance of 50,000 passengers an hour in each direction, private cars are estimated to need a road width of 210 m., buses 35 m. and underground railways 9 m. In addition, cars are also exceptionally space-consuming when they are not being used.

With such space demands, it is not surprising that the traffic situation in the city centres of the West is rapidly deteriorating. A general widening of streets in the city centre to meet the growing need for space for vehicular traffic has proved neither possible nor desirable. Instead, attempts have been made to widen certain streets so that they may become more intensively used, and to restrict the use of other streets, for example, by one-way systems, forbidding through-traffic, and forbidding parking.

In certain cases it is planned to have the whole city centre, or large parts of it, forbidden to the automobile; for example, in Kassel and the centre of Trier it is proposed that there shall be only a few main streets, and

all these will lead to parking places. The most interesting and radical proposals so far put forward for an entire city centre for pedestrians only are those by Victor Gruen for the city of Fort Worth, Texas. Around a centre for the city's population (which, including the suburbs, is expected to increase to 1,200,000 in 1970) there was planned a ring road with a large traffic capacity. Along this there would be sited six large parking buildings with a total of 38,000 places. Victor Gruen has estimated that half of the whole conveyance of passengers to the centre would be effected by express buses. At present only

about 17 per cent use collective means of transport. Distribution of goods would take place entirely below ground level. All open spaces inside the ring road would be reserved for pedestrians.

The fact must be reckoned with, therefore, that vehicular traffic within the city centre will relentlessly increase until the limits of accessibility have been reached. In several European big cities it will soon prove not only desirable but necessary to ban private cars from large parts of the city centre.



Credit: Victor Gruen and Associates

Plan for Central Fort Worth

Though never carried out, this plan (early 1950's) for a core of a Texas city is, nevertheless, something of a classic. The plan integrated freeways, which formed the border of the plan, with massive parking garages, which in turn were within easy pedestrian access to all parts of the auto-free core. Commercial vehicle access was provided by a series of underground tunnels. Full integrity was thus afforded to functions which had formerly been in conflict. As a result, all functions of the centre were brought into a workable unity of the whole

COMMUNITY STRUCTURE AND METROPOLITAN PLANNING*

C. DOXIADIS AND THE ATHENS TECHNOLOGICAL INSTITUTE, GRADUATE SCHOOL OF EKISTICS

The metropolitan area is defined as a central city with its contiguous and surrounding areas, having a density of population high enough to demonstrate urban occupancy. The metropolitan area is the focus of a region which it serves and which is served by it, and dominates the region's social, political and economic life.

The cities of our era are confronted with a great number of problems. Some have been inherited from the past while others owe their origin to more recent developments. The basic developments which condition the city and create the contemporary problems include: (a) the unprecedented and universal increase of population; (b) the recognition that government and society have to serve the whole city and all its citizens; (c) the introduction of the machine which disrupts the existing human scale; (d) the rapid change in economic structure; (e) the growing complexity of satisfying the needs of the individual and providing for the social organization of the community; (f) the rate of change in the urban physical structure which makes obsolete static planning and demands a fourth dimension—time; (g) the pattern of urban growth in concentric circles which strangles life in the centre of the metropolis and prevents its normal development.

EAST AND WEST

Before cities began to be built, when mankind lived in villages, it is highly probable that there were few differences in human settlements between East and West. As the settlements and the buildings passed the primitive stage, a differentiation in settlements started to be revealed, local architecture began to be manifested, thus giving rise to local solutions in towns and to local architectural styles.

With the advent of modern technology certain integrating forces are set in motion and are once again actively creating uniform expressions throughout the world. These forces are, in the main, scientific and technological. Thus, whereas traditionally a villager's house, whether in one part of the world or another, was influenced almost solely by local forces, such as climate,

workmen, materials and traditions, now a similar railway station, harbour or airport is built for trains, ships or airplanes common to all parts of the world.

These integrating phenomena are being intensified, and it is now evident that we are moving rapidly towards world expressions, so rapidly that there are very clear dangers of extinguishing all local expressions.

It is at this point that we may discern the great problem which confronts the East, or less developed world. Whereas Western scientific and technological development started two or three centuries ago and local expressions have as a result been gradually diminishing, the advent of modern science and technology in the East is occurring suddenly, endangering local expressions with complete suppression within a short period of time. The West at least had time to find an equilibrium between local and universal expressions.

It would be useful to consider whether the terms "developed" and "undeveloped" are as largely applicable to settlements, as they are to countries. We may say that, from a technological and economic standpoint, we have more developed settlements in developed countries, but we are not at all sure whether the large cities of the West, for example, give rise to higher hopes for a better living than the small settlements of the past.

ECONOMIC FACTORS

In the past, roughly prior to the Industrial Revolution, settlements were located and planned with more consideration given to factors other than economic. Defence, for example, influenced planning decisions. Inaccessible sites were chosen, walls and fortifications contained the city, and streets were designed for military purposes. Often, religion was an influencing element, where buildings and streets were laid out according to certain religious controls.

Following the Industrial Revolution and the decline in the city-state, settlements began to free themselves of outside limitations; and as efforts were increasingly focussed on industrial and economic initiative, less and less attention was given to planning. From this period to the twentieth century most of these economic factors operated freely, barring the obstacles created by old buildings, walls, and narrow streets.

Thus, we see a long period of gradual growth and development under rigid planning control based on

* Condensed from "Ekistics and metropolitan planning in the Near and Middle East", Background Paper No. 5 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961, and from "Physical planning for the development of satellites and new towns", Background Paper No. 10 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.

strong outside forces, followed by a relatively short but dynamic period of drastic change in settlements with little or no planning control over the basic forces at work.

Since 1900 and especially since World War II, a powerful new force has been evolving. This force is an effort to provide a healthy and pleasant environment for every human being. This characteristic of our era is reflected in settlements, where the lack of quality in human life is most strongly felt.

Once again cities are becoming subject to planning controls, but this time in response to totally different forces. The gradual awareness of the responsibility for providing healthy and happy surroundings for everyone is the underlying force. Since the process of providing the right kind of environment for everyone is so intimately tied to economic development, the study and understanding of the economic forces is a paramount prerequisite to the goal.

HIERARCHY OF ECONOMIC FUNCTIONS

Modern settlements have evolved from patterns which to a large extent reflected an efficient arrangement of economic activities. This arrangement takes the form of a hierarchy. Evidence can be seen on two levels: the region and the metropolitan area. To be comprehensive, planning must consider both.

If examined in the region it is found that settlements arrange themselves in a definite pattern. The pattern taken by cities, towns and villages prior to industrialization was found by Christaller¹ to be hexagonal. In this pattern seven types of centres are identified, the smallest serving 3,000-4,000 people in an area of forty-five square kilometres.

Each type or size of community can be given its own designation.² Each class A community consists of the village and the agricultural area surrounding it. The size of such a community may be determined by the permissible maximum distance the farmer may have to walk to reach his field. The quality of the soil and the possibility of its irrigation will determine the size of each lot to ensure the survival of the farmer's family. Finally the capacity of the total area of the community may determine the number of families and, therefore, the size of the village.

Theoretically, the fundamental community in a homogeneous area will be circular with the village in the centre and the farms around it. The theoretical regional pattern, therefore, of the interrelation of the various rural communities will be the one which will permit us to have the class B community in the middle with fundamental class A communities formed around it, without any loss of space. The only pattern which meets these two requirements is the hexagon.

In a homogeneous farming area, consequently, we

shall have six hexagonal fundamental communities laid on a periphery, with one hexagonal class B community in the centre. Seven such groups of communities, laid in the same way, determine the area and the number of villages served by an even higher order class C community, a market town. In the same way we proceed to the determination of class D or class E communities.

This pattern of interrelation is theoretical only and has to be adapted to meet certain regional and local conditions: hills, mountains, rivers, lakes; or because of technical work: highways, railways, canals; or because of soil quality, that is, land of differing fertility, dry farming, irrigated areas, etc.

Large-scale development of industry may also alter the basic pattern as outlined. Thus the hexagonal pattern of settlements with a hierarchy of sizes and functions may have superimposed upon it another pattern created by industrialization. The result may be a considerably altered pattern, as the industrial centres attract such large numbers of people that they offset the centres of gravity of the hexagonal region and create new centres in themselves.

Industry itself is seen to respond to three main forces: markets, resources and transport. There are numerous exceptions, but these are the dominant elements. Of the three, the most variable is market, which, as it becomes large, seems to dominate the other forces. Large markets are also usually large transport centres, which provide a double attraction. In less developed countries where the economy, culture and administration are highly centralized in one or several metropolitan areas, it is extremely difficult to restrain population migration to that centre or centres.

The result is that the largest, richest markets are located there, which adds attractions for industry. As a result, it is extremely difficult to attract industry in other parts of the country. However, if cognizance is taken of the fact that much industry does not require central locations within the metropolitan area, but accessibility only in certain specialized transport systems, then much industry can be accommodated in areas outside the major concentrations, but within range of the city. One of the main arguments for decentralization of industry is extreme congestion in metropolitan areas. Congestion, however, can be largely attributed to lack of planning and not to concentration of industry. Space can be utilized in an orderly way if the metropolitan area is encompassed within a region by a unified concept.

The most dominant characteristic of the metropolis is that it is continuously expanding. Whereas the original urban unit may have been composed of one or more communities within which social and economic unity was preserved, the newly developed areas generally constitute an amorphous mass of dwellings and structures with a disorderly arrangement of social and economic functions.

The automobile has had a further disruptive effect on metropolitan areas. The flexibility and mobility provided for the urban dweller seem to preclude orderly

¹ Walter Christaller, "Die zentralen Orte in Süddeutschland", *Jena Review* (Jena, German Democratic Republic), 1935.

² Communities classes A, B, C, etc., are rural communities, while communities classes I, II, III, etc., are urban communities.

arrangement of economic functions. Nevertheless, it is becoming more and more apparent that as the number of automobiles in a city increases the greater is the need for providing an economic structure which does not require the extensive duplication of travel patterns.

The allocation of economic functions to positions in a hierarchy of functions, depending upon the number of people served at each level, appears to best fit the need for many economic functions within the metropolitan area. A hierarchy of interlocking communities provides the best framework for their location.

The following table illustrates the general types of functions that would occur in each size community, extending from class I community, the smallest cell from which the entire complex of human communities is built, up to class IV community, the largest self-contained human community. In each successive stage from class I to IV, community commercial functions are organized to serve progressively larger pedestrian populations. From class V community and up, public transport or the automobile provides the scale for interchange. It is also from this scale upward that industry must be located in the metropolitan area.

URBAN COMMUNITY CLASSES

<i>Community class</i>	<i>Size of population</i>	<i>Economic functions</i>
I	30-80	
II	500	
III	2,000-2,500	Local shops, newspaper stand, etc.
IV	6,000-10,000	Neighbourhood shopping, handicraft shops
V	30,000-60,000	Self-contained commercial shopping
VI	150,000-300,000	Transport centres, controlled industry, central markets
VII	900,000-1,500,000	Specialized functions serving large areas
VIII	4,500,000-7,500,000	Specialized functions serving large areas

Thus, it is seen that the metropolitan community has two main characteristics. As a total unit it plays a role in the regional and national economy. This role, fitted into a functional pattern of settlements, determines the general outlines of its size and activities. Because nearly all national and regional economies are expanding, the metropolitan area is a dynamic entity. This in turn is related to the structure of the metropolitan area itself, which reflects an internal pattern of functional inter-relationships. As metropolitan areas rapidly expand, old patterns become more and more obsolete. New patterns must be devised which will use the full knowledge and understanding of the existing economic system, but which will be dynamic in concept and form.

REGIONAL DISTRIBUTION OF SETTLEMENTS

What has greatly changed in urban settlements is the dimension of what is called a region. In the past, a region, which today might be a metropolitan area, might have

been a network of cities, with villages and farms in between. Where an urban area in the past could have a dimension of a few miles, now it may span over a hundred miles. Generally, though, the relationship of urban centres remains, as a whole, the same. They still form networks with a hierarchy of centres, even as these networks have centres of much higher order.

As a result of this change of scale, some settlements outgrow their initial functions, some, because of the growth of other centres, are absorbed; some remain static, or even decline; some new settlements are created as specialized centres, such as dormitory towns; some new urban centres are created in areas where previously none existed. One of the most characteristic phenomenon of the change is the fact that the urban settlements of the present constitute a "many-nucleated-city".

From such a continuous growth, it becomes apparent that even settlements which were created to decentralize functions of the growing settlements, like satellite towns, gradually become absorbed by the growing settlement. Without adequate control, it is only a matter of time before any satellite will become a part of a broader continuous urban area.

SOCIAL FACTORS

The city and its structure reflect the philosophy, life and vision of its people.

Certain ancient Greek cities were located and planned with central consideration being given to the social structure. Hippodamus, for example, divided the settlement into three areas corresponding to the three main social classes of the population. Other early Greek and Roman settlements were clearly influenced by religious factors (evidenced in the fact that settlements were dedicated to gods) necessitating specific land-use patterns.

Once again the need to identify ultimate goals to be served by a human settlement becomes critically important. This importance will increase in the future as the complexity of our life increases. Design must be greatly conditioned by the ultimate objectives, and these must provide the essential justifications for the very existence of the human settlement. Obviously the socio-cultural pattern and value-system of the people served by the settlement play a dominating role in conceptualization and implementation.

The ultimate goal of the settlement and the forms through which the goals find expression are usually found in the way of life and socio-cultural *milieu* of the population. Hence "why the settlement?" and "what are the ultimate purposes it should serve?" are at the core of planning.

Certainly the planner's own value-system and frame of reference condition his thoughts and actions. Conscious awareness of this factor, which can be simultaneously a strength and a weakness, is an indispensable pre-condition to a valid frame of reference.

The value-system and frame of reference of the

planners form the first foundation of the planner's professional ability. His empirical observations on the social system provide the second dimension enriching his conceptualization.

SEARCH FOR IDEAL

The search for the ideal is our greatest obligation if we want to create a worthy context for man to live within. To search for the ideal does not mean that either we will discover it or be able to implement it. Nevertheless, this is no excuse for not trying. If we start with the view that an ideal is not necessary or attainable, we have already compromised, and there is no limit to how low our compromises can lead us.

On the other hand, to search for the best solution to problems of a particular moment does not again mean that we search for the ideal. By the time it is applied, it will likely be outdated, because the conditions on which this solution is based will have been changed as well. It is therefore imperative to base our search on the goals for the future, even if along the way we have to readjust our efforts in the light of problems, possibilities or new ideals.

Ideal solutions have to cover all aspects of settlements: economic, social, administrative, technological and aesthetic. If the ideal aims to fully satisfy only one aspect, it is certain to be at the expense of the others. These extreme solutions will lead to an unbalanced settlement. Where one force will have almost complete control, others will be partially or totally neglected.

Also, the solution cannot be a romantic return to ideal types of the past. This would mean a reversal of history. The ideal solution can be found if we consider all factors affecting the life of an urban settlement in the present and future. The consideration of the future has been made especially necessary in our era because we have overlooked a new important characteristic of the human settlements: their dynamic growth.

SOCIAL FRAME OF REFERENCE

At the roots of our effort to establish a dynamic and ideal human settlement in the modern city is a fundamental concern with the individual and his physical, mental, emotional and spiritual needs. The creation of a new city or efforts in urban renewal must include more concern, thought and work with human beings than has heretofore been done in housing or physical planning.

The great challenge facing the city of today and the city of the future is the moulding of a socio-economic-physical environment worthy of the human potentialities. Houses, roads, concrete and money are not enough to build a real city. Without a vigorous community to create constructive human relationships and values and carry on after a generation has gone away, there will not be a human settlement, but a mere aggregate of houses and roads.

In the design of a city we should put the individual first and be conscious of the dynamic interaction between

human beings and physical things. Houses, streets, lots, neighbourhoods, markets, playgrounds, land uses, public facilities are then composed with an effort to establish a physical environment in which human beings can find optimum conditions for human growth, initiative, participation, and social interaction. Open spaces and distances are then designed to reflect the central, predominant role of human beings and their activities. In designing communal focal points, we should be conscious of the traditional way of life and culture of the people who live in the city.

The design should also reflect consideration of the basic dynamics of social organization. Men must organize their behaviour for co-operation and for adjustment to the environment. This interdependence is not a rigid instinctive type of behaviour, but stems from the human group, the community, which mediates the relationship with himself and others. In designing the city, planners must relate the scales—that of man and machine—but keep them distinct, separate and apart according to level of function, organization and needs.

This, then, is the basis for community structure in a settlement.

CELLULAR GROWTH

The main element of an organism is the cell. When an organism changes in size, its cells do not also change in size. What allows the organism to grow is multiplication of the cells, while their size remains stable, irrespective of the stage of evolution in which the organism is; whether a young boy or an old man, or a young or an old tree. Cells which are forced to grow in size are abnormal cells.

By analogy, the major problems created within the dynamically growing settlements are caused by every cell within them turning into a dynamic one, whereas each should normally remain stable. The search, therefore, for ideal solutions has to be geared towards stable cells and dynamic growth of the whole organism.

If, for instance, we have a small village and several country roads leading into it, any additional function on the country road would mean additional pressures on the village, both to the heart and to the periphery. If, on the contrary, we divert the roads so that they leave the village intact as a cell, the village will be saved from these additional pressures, which will now be developed in new centres adjacent to new roads.

The same is valid for a neighbourhood within a city, for a city within a metropolitan area, for any settlement within space. As long as we allow each neighbourhood to be the centre of certain functions and to be at the cross-roads of the main lines of transport, it cannot remain stable. If by creating major lines of transport outside of them we avoid directing all the functions through them and especially through their centres, we can create ideal cells in which man can lead a normal life of reasonable stability rather than one imposed by the growth of every cell in the whole organism.

To make these units function as stable cells we have to achieve the following:

- (1) Isolate them from through-traffic as much as possible to allow their functions to grow, free from the interference of transport lines;
- (2) Create as much cohesion, and serve as many needs inside the unit as possible, to make it self-sustained;
- (3) Protect the unit from external disruptions and nuisances.

Some people say that neighbourhood planning has lost its importance because people now tend to develop a network of relationships with others of the same profession, class, or intellectual interest, regardless of neighbourhoods. This is quite true. People need these types of contacts but at the same time people also need neighbourly contacts. We cannot say that Socrates in ancient Athens had a friendship only with his neighbours, but this did not lead anyone in Athens to think that neighbourliness had no meaning. At all times people in urban areas have tended to develop two patterns of social contacts: (a) one is based on geographical relationships; (b) the second, superimposed on the first but not disrupting it, is based on relationships between similar elements.

HIERARCHY OF COMMUNITY FUNCTIONS

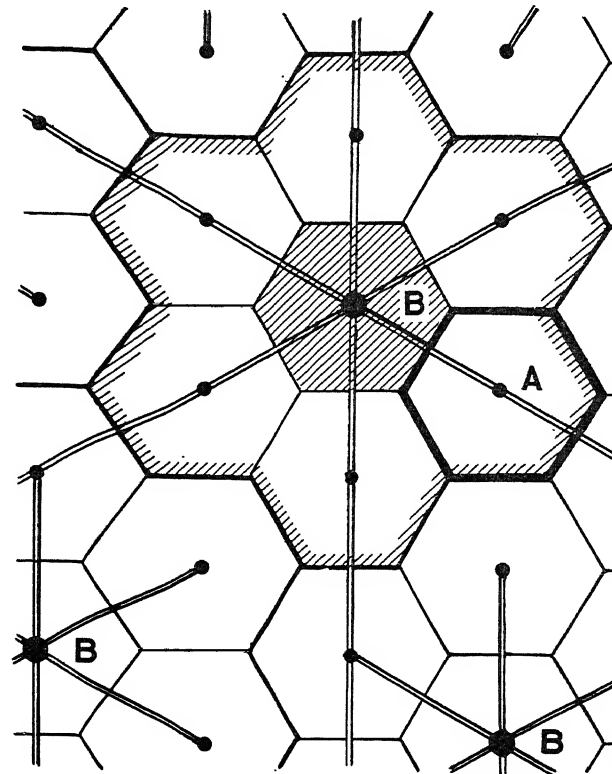
The basic elements of the human-centered design is the community which recaptures the human scale, and the interlocking human communities, which create optimum conditions for social intercourse, human growth, and organization. The hierarchy of goals, functions and facilities permits planners to plan the city in a rational way from its basic element, the family, to its most complex and large component. In social organizational terms, a group is not an aggregate of individuals, it is instead a structure of relations among individuals in different orders and positions. The more complex the structure, the more necessary it becomes to differentiate between major economic and technical functions and socially worthy association, and to provide for the latter.

Class I community, accommodating ten to fifteen families, is the smallest unit directly above the family. It is a functional, relatively homogeneous group centered around a small square which facilitates interaction among children and adults.

Class II community usually accommodates about seventy-five families and consists of five class I communities. It represents a slightly more complex organizational pattern and the unifying elements are a playground for pre-school children and a wider pedestrian street connecting the narrow lanes of the smaller communities.

Class III community usually accommodates 600-700 families, and centres around an elementary school and local market.

Class IV community usually accommodates 1,500-2,000 families (7,000-10,000 individuals) and evolves around market shopping and a civic centre. This



Credit: Doxiadis Asso

Regional pattern

community represents the smallest, complete, contained social unit of the city of the future, and constitutes the largest unit which does not permit complete motor traffic penetration from one part to another.

Class V, VI, VII communities, the larger urban communities, each consists of several relatively small communities. The higher the level of organization, the more difficult is the task of creating a well-balanced community to meet contrasting human needs. The challenge is to provide man with all benefits of technological advancement without frustrating his ability to associate freely and creatively. Urban physical design must support sound, stimulating and diversified human relationships if there is to be a strong community.

WORK AND MOVEMENT

A harmonious synthesis of residential, industrial and socio-cultural facilities is indispensable for the growth of the community. Nevertheless, commercial, industrial and business districts determine its growth.

By necessity, places of work and socio-cultural functions should be included proportionately in communities at certain levels. There can be places of work within a class I community, but only when appropriate small and contained within the residential plots for home industries. A class II community can occasionally provide two or three shops. Class III communities can provide larger clusters of shops and space for handicraft shops. Class IV communities may be provided with

shopping centres and places of work related to education, sports and the like. Larger units such as Class V communities may provide industry which is not detrimental to the health of the people or to cultural and aesthetic considerations.

Of utmost importance for the establishment of the human scale is separation of pedestrian and motor traffic. The total pattern of movements should be balanced and meet the needs of both human beings and vehicles in an autonomous and yet interdependent way. Pedestrian traffic can be segregated from vehicle traffic, mainly within human communities and in central sections of the business and commercial districts. These areas must, nevertheless, be linked by other fast means of communication.

PLANNING PRINCIPLES

The problems to be solved are not static. The accumulation of new problems will call for the introduction of more adequate methods to cope with a dynamic development of the city.

Following from the analysis of this paper, the city must be conceived, planned and designed with due consideration to a few basic principles:

(1) Planning should be comprehensive and include all social groups and all types of functions. Planning and building should serve all human needs on the basis of the principle of unity of purpose, that which is

combined to simultaneously satisfy the economic, social, political, æsthetic and cultural requirements of man;

(2) The internal social conditions, such as the types of people, their diversified needs, will affect and influence each other within the city. This leads to the need for good organization and a proper hierarchy of functions. The city of the future can no longer be built in the haphazard way where people and cars, residences and factories, shops and schools are indiscriminately mixed. Order and hierarchy are indispensable to make all functions part of a well-co-ordinated system of interdependent activities;

(3) Another principle for the future city is the freedom to develop dynamically. In the future, the fourth dimension, the dimension of time, must be given greater importance. Forces of expansion and change will be much greater than in the static city of the past, and will create abrupt and severe problems. If these problems are to be resolved, and if human opportunity is to be expanded, change must be anticipated in the urban physical form to permit a flexible and smooth response to each age. This is why the design of the city should be influenced much more by time than by any other consideration;

(4) The city of the future has to be built in various scales. The city of the past was built only for human beings (the human scale), whereas the city of the future has to be built at two scales—men and cars.

ECONOMIC FACTORS OF METROPOLITAN PLANNING*

M. J. WISE

The report of the United Nations Seminar on Regional Planning, Tokyo, 1958,¹ demonstrated the vital need to prepare and put into effect comprehensive regional plans for metropolitan areas. It was emphasized that, if such plans were to succeed, they must be adequately related to plans for national development and to plans for rural areas and areas of special (e.g., one-industry) character.

Metropolitan regional planning is affected at every phase by consciousness that the metropolitan area performs certain essential economic functions. Planning must be based upon a realistic appraisal of those functions, and of the economic forces making for (a) the physical growth of the metropolitan area; (b) the changing pattern and character of land use within and around the metropolis; (c) the changing role of the metropolis in national and international life and economy.

Urban growth and planning cannot be dissociated from changes in the geographical distribution of industry, employment and population. Similarly, problems presented by areas of declining or stagnant economic conditions and the practical possibility of achieving improvements in regional economic balance are clearly related to the general forces shaping the location of employment and other possibilities.

In this paper an attempt is made to indicate some of the economic forces currently at work influencing the growth of, and the problems of planning in, metropolitan areas in northwestern Europe. The economies of metropolitan areas cannot be considered in isolation from their national, and indeed international, economic settings. In view of this and of the existence in some west European countries of public policies for improving regional balance and stimulating the economies of so-called development or under-developed areas within countries, some attention is devoted also to the forces making for centralization and decentralization.

CONCERN WITH EXCESSIVE METROPOLITAN GROWTH

Although a number of countries have devised and applied schemes of various kinds for restricting the growth of some metropolitan areas, the continued disproportionate growth of some metropolitan areas

and the continuance, and indeed appearance, of areas of declining industry and unemployment gives rise to considerable concern.

In a number of west European countries a significant proportion of the population lives, or is employed in a single or a few great conurbations. In Great Britain 80 per cent of the population is urban; about one quarter dwell in the Greater London metropolitan area alone. Despite the relatively strong measures applied by the Government the growth of Greater London has continued since the 1939-1945 war at a rate only slightly lower than before 1939. Between 1952 and 1958 the London region, an area of about forty miles radius from the centre, increased in employment by over 7 per cent compared with the national average of 5 per cent. In the same period the London region, which has 27 per cent of the population of England and Wales received over 40 per cent of the increase in national employment. No less than 12 per cent of this increase was concentrated in a small area in the central business districts of London. The main trends are: (a) an over-all increase, at a continued high rate, of the area, population and employment of the metropolitan area of London; (b) an increasing concentration of employment in the centre; (c) decreases in the residential population in outer suburban and country areas. Thus the measures applied to restrict conurbation growth have, in this case, succeeded only partially. Their effect has been to brake but not completely to check the rate of growth.

On a smaller scale the problem of the continued rapid growth of the West Midland Conurbation of Birmingham and the Black Country has given rise to concern. Problems similar in character may be seen in Northern Ireland, where Belfast continues to dominate economic life. Belfast has 40 per cent of the population of Northern Ireland and 60 per cent of the employment. In the Republic of Ireland, it has been argued, the economic life of the country is becoming centralized to an increasing degree in Dublin. In Europe concern has been expressed at the further growth of employment and population in Paris in relation to national totals and to the experience of certain other regions.² To the outside

* Background Paper No. 6 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1966.

¹ *Regional Planning, Housing, Building and Planning Bulletin* No. 12-13 (United Nations publication, Sales No.: 59.IV.7).

² A review of planning policies affecting problems of metropolitan areas and regional balance is given in H. A. Lane, *Industrielle Standortspolitik, ihre Notwendigkeit und ihre Aufgaben*, Thesis, University of Cologne, 1957; R. Auzelle, "Town planning administration in France", *Town Planning Review* (Liverpool), xxviii, 1957-1958, p. 7 et seq.; T. J. D. Fair, *Review of Regional Planning in Great Britain, the Netherlands, Western Germany* (South Africa, 1957).

observer the problem of Brussels in relation to the regional economies of Belgium appears to deserve serious study.³ Great concern has been apparent in the Netherlands at the problems created by the gathering of a disproportionately large part of the population in the *Randstad* (rim-city).⁴ In Sweden, too, the problem of the further growth and planning of Stockholm, contrasted with areas where employment is overdependent on a narrow range of industries, has given rise to anxiety.⁵

ECONOMIC BACKGROUND TO POLICIES FOR METROPOLITAN AREAS

It is evident that strong forces are actively promoting (a) the growth of employment and population in large cities; and (b) the maintenance, and in some cases the exacerbation, of situations of regional imbalance. Before considering in what ways future regional planning policies for metropolitan areas should accept the implications of current economic trends it is necessary to examine some current principles of policy and their economic background.

In formulating planning policies for metropolitan areas, industrial location and regional unemployment in the United Kingdom, the views of the Barlow Commission⁶ carried great weight. To a considerable extent, their conclusions were embodied in the post-war Distribution of Industry and Town and Country Planning Acts of Parliament.

The principal recommendations of this Commission may be summarized as: (a) the restriction of the further growth of certain "over-large" conurbations, notably Greater London; (b) the attainment of what has been described as "a reasonable balance" of industrial development between the various regions of the country; (c) the re-development of congested urban areas, especially the inner areas of great cities; (d) the decentralization or dispersal of industries and population from great conurbations, and especially from their inner areas. Various methods (e.g., negative controls, the building of factory estates, financial assistance in various forms) have been applied in some measure in a number of west European countries in furtherance of these and similar aims, and a limited amount of success has been achieved.⁷

It must be remembered that these pillars of policy were erected twenty years ago, by a Commission especially charged to examine the disadvantages of great cities,

³ Ministère des travaux publics, *Le plan d'aménagement de la région liégeoise*; T. H. Elkins, "Liège and the problems of southern Belgium", *Geography* (London), xli, 1956; R. E. Dickinson, "The geography of commuting: the Netherlands and Belgium", *Geographical Review* (New York), xlvii, 1957, pp. 521-538.

⁴ Jac. P. Thijssen, "Rim-city Holland", *Delta*, 1958-1959, pp. 5-19.

⁵ Gosta Ahlberg, *Population Trends and Urbanization in Sweden, 1911-1950* (Lund, 1956). Town Planning Office of the City of Stockholm, *General plan for Stockholm*, 1952. W. William-Olsson, *Stockholm, Structure and Development*, Uppsala, 1960.

⁶ Royal Commission on the Distribution of the Industrial Population Report (Her Majesty's Stationery Office, Cmd. 6153, 1940).

⁷ J. Sykes, "Location of industry and population", *Journal of the Town Planning Institute* (London), xlv, 1959.

against the dismal background of economic depression and widespread unemployment of the nineteen-thirties and under a cloud of apprehension about the vulnerability of large cities to aerial attack. In the years since the end of the war, great changes have taken place. The problem of great cities has become more acute. New policies for metropolitan area development must now be considered and applied. First we must consider the principal changes in economic circumstances since the formulation of Barlow principles.

CHANGING ECONOMIC CIRCUMSTANCES

Increases in population. In a number of countries increases in total population have been greater than expected. In England and Wales there has been an average increase of about 200,000 each year since 1951. The birth rate has increased, and recent projections show an anticipated increase of about 3 million in the period 1958-1973. This is the equivalent to about fifty new towns of current British planning practice. In the Netherlands, estimated increases above the 1954 estimate of 10.5 million point to a population of 13 million by 1970. Since the end of the war, birth rates in France and Norway have increased substantially above pre-war levels.

Increases in households. Associated with the increases in total populations have been significant changes in the structure of population. One of the most significant of these changes is increasing longevity. The consequences for urban planning include: a further reduction in the average size of each household, an increase in the number of new households at a rate greater than that of population growth. Even in towns where the population is no longer increasing in numbers, the demand for new houses may continue to be high. This has been the experience of many towns in Lancashire, for example. The implications are that the demand for housing in metropolitan areas will continue for the foreseeable future to be at a high rate.

Continued changes in the relative importance of major industries. Coal mining and textiles show general decline as employment providers. Since coal fields and textile manufacturing areas are often highly specialized the consequent effects of employment in parts of Lancashire, Flanders, the Borinage, St. Etienne, Amiens and other areas have been serious. On the other hand, improved technology and widening markets have assisted in such industries as oil refining, petro-chemicals, automobiles, radio and electronics, aircraft, electrical engineering, etc. Again it must be stressed that planners must not assume that the geographic pattern of industry is static: it is ever changing, adjusting itself to new conditions of technology, competition, supply and demand.

New science-based industry. Much new industrial development arising from scientific and technical advances springs from, and often takes place near, scientific research laboratories. These seedlings of the industrial forest are often located near large cities. In Great Britain the majority are located near London.

The post-war period has been one of general economic expansion. Production of goods and services has shown substantial annual rates of increase in most countries. In the early part of the post-war period a relatively small part of the increase went to the personal consumer: in the last few years individual consumers have enjoyed greater benefits. The indications are that this tendency will grow. Increase in the demand for vehicles, consumer durables for home and recreation, for improved living conditions and for better housing standards may be expected. As personal standards of living rise, the aged housing near the centres of great cities will no longer provide acceptable accommodation. The demand for new housing of either multi-dwelling or single dwelling type within and on the fringes of cities may be expected to reach higher levels. In Great Britain, where the real wages increased 59 per cent between 1938 and 1956 this position is now being reached, and is a potent force influencing the changing size and shape of London.

Of special importance to metropolitan area growth is the current expansion in centralized service industries. Service functions have always been an essential characteristic of towns, but the recent extension of these activities both in range and magnitude has given them a prominence in the structure of urban employment which is continually mounting. In larger cities an increasing proportion of the employed population is engaged in administration, professional activities, retailing, entertainment, education, health services, etc. "The rapid expansion of service occupations (employing both men and women) is undoubtedly one of the main causes of the increasing size of large towns.⁸ In England and Wales 47 per cent of the employed population was engaged in service in 1951. In the Administrative County of London the proportion was 63 per cent.

Transport. Of all the influences that bear upon the problems of urban and regional development, transport is undoubtedly one of the most significant.⁹ The opening of new lines of communication, the improvement of old ones, and the initiation of new services create and destroy locational values of areas for new enterprise. Great importance must be attached to the development of national and international air services, the improvement of inland waterways, the electrification of railroads, the construction of new motorways. By widening supply and market areas, such improvements permit the growth at strategic points on the transport net of economic concentrations of great size. London, Paris, the north Rhine-Westphalia industrial regions are examples.

The growth of private car ownership seems likely to rise with income. For Great Britain this suggests an increase of at least 250,000 more cars on the roads each year for the foreseeable future. British traffic increased 7 per cent each year between 1954-1958 and 12 per cent in 1958-1959. The implications of this trend must be

carefully considered. Increased car ownership has thus made it possible for city workers to move from the inner built-up areas to homes in the outer country ring and to undertake longer journeys to work.

The general conclusion of B. J. L. Berry,¹⁰ reached after a full review of recent European literature, that improved accessibility increases the competitive ability of higher order urban centres *vis-à-vis* lower order centres and promotes centralization. It permits, a secondary dispersal about the great centre, making for the spreading outwards of metropolitan communities. On all counts a clear case therefore exists for the closer integration of transport planning with regional planning.

Fuel and power. The increasing adoption by industry and transport of oil, natural gas and electricity and the improved technology of transport by grid transmission and pipeline networks must not be overlooked as a factor permitting the gathering of industry in and near the greatest market and labour force areas.

Increasing intervention by Governments is a major feature of the changed economic situation (a) to maintain high general levels of employment; (b) to prevent and, where necessary, remedy local and regional unemployment; (c) as direct investors in public utility schemes, e.g., of transport, land reclamation, fuel and power provision.

Schemes for the integration of Western Europe, especially the Common Market proposals, will produce new conditions favouring the growth of activity and population in some areas and causing decline in others. As customs and tariff barriers dwindle and as market areas widen changes in the organization and scale of industrial concerns will have regional effects. The widening of market areas may well permit further areal specialization of manufacturing industry. Certain centres, already strong, may well become stronger. Insufficient attention has yet been given to the locational consequences of decisions on economic integration. In Great Britain the indications are that the value of industrial locations in south-east England has already been heightened. The relative importance of the economic heart of north-west Europe may well increase.

FORCES OF AGGLOMERATION

Powerful agents of metropolitan agglomeration have been recognized for at least half a century,¹¹ but have usually been undervalued in planning. The circumstances outlined above, especially the emergence of a wide range of industry with a high coefficient of manufacture freed from raw material and fuel locations and the growth of servicing industries, have permitted a rise in the importance of agglomerative forces.

⁸ K. C. Edwards, "Trends in urban expansion", *Advancement of Science* (London), 1959.

⁹ Colin Clark, "Transport, maker and breaker of cities", *Town Planning Review* (Liverpool), No. xxviii.

¹⁰ B. J. L. Berry, "Recent studies concerning the role of transportation in the space economy", *Annals of the Association of American Geographers* (Albany), No. 49, 1959, pp. 328-342.

¹¹ A. Weber, *Theory of the Location of Industries*, trans. C. J. Friedrich (Chicago, 1929).

Detailed analyses of urbanization economies will be found in the works of Hoover, Losch and Isard.¹² Hoover, for example, classifies agglomeration factors as: (a) large-scale economies within a firm consequent upon the enlargement of the scale of production at one point; (b) localization economies for all firms in a single location, consequent upon the enlargement of the total output of that industry at that location; (c) urbanization economies for all firms in all industries at a single location consequent upon the enlargement of the total economic size of that location.

P. Sargent Florence¹³ has shown the special importance for industrial areas of "industrial linkage", especially for plants of small or medium scale. Florence has also tried to arrive at a balance of advantages and disadvantages accruing through size in large urban concentrations.¹⁴ He applies four principal tests: (a) efficiency in increasing current production; (b) efficiency in increasing future income; (c) efficiency in pattern of income distribution; (d) efficiency in offering a variety of jobs and services. The general conclusion is that some degree of metropolitan concentration is an economic advantage. However, in most metropolitan areas some decentralization of certain economic activities could be achieved without economic loss. The problems are: (a) who is to undertake the assessment?; (b) who is to be responsible for planning and executing the necessary reorientation?

Studies in London demonstrate the very real effect of agglomerative forces on the desirability to many manufacturers of a location somewhere within the conurbation.¹⁵ Schemes for restricting the growth of London and decentralizing industry have not fully reckoned with the strength and vigour of agglomerative forces. Thus, economies and advantages that accrue to manufacturing and commercial enterprises from common participation in concentrations of large size, and from proximity to one another, are powerful agents in metropolitan area growth. Cities and conurbations at focal points on the transport net develop keen and powerful linkages between constituent enterprises. Under favourable circumstances cities are able to engender and promote their own growth.

In theory, at some point in the growth of a metropolitan area, agglomerative forces should be outbalanced by deglomerative forces. At what stage do deglomerative forces operate? The Barlow Report placed stress on the disadvantages of concentration, especially of congestion,

and long journeys to work. Much evidence exists, however, that men and women of initiative are willing to bear such daily disadvantages to take advantage of opportunities for economic advancement and the highly developed cultural and entertainment facilities of the great city.

Others suggest that deglomerative forces are reduced since users of city space are not always called upon to pay the full costs of occupying that space.¹⁶ Hidden subsidies, e.g., on urban transport services, car parking, and high blocks of flats, reduce the disadvantages of city locations to employers and workers. It is also suggested that administrative costs of large cities are relatively very high and may be subsidized by other areas.¹⁷ This suggestion raises the need for further analysis of the contribution made by metropolitan areas in national economies.

ECONOMIC ANALYSIS OF METROPOLITAN AREAS

Classifications by occupation or employment group have been employed, based upon the relative proportions of employed workers in individual metropolitan areas. Such classifications, based upon the use of a single source of statistics, can be speedily made. Then classes of metropolitan areas can be distinguished, e.g., manufacturing, diversified, transport, mining and extractive industry, cultural, wholesale and retail, etc.¹⁸ Using a similar type of classification, attempts have been made to erect a hierarchy of city functions, distinguishing cities with greater and less variety of services.¹⁹ Clark has examined the economic functions of a city by size, arguing, for example, that a region can give its inhabitants an adequate range of commercial services when he population of its principal city is in the neighbourhood of 100,000 to 250,000

Service functions and tributary areas. Fundamental to understanding city growth and location is an examination of the service functions of cities and the delimitation of urban hinterlands.²⁰ A great variety of criteria have been used including, for example, education services, local newspapers, banks and financial institutions, retail shopping services. Hierarchies of cities have been distinguished by service functions and town-hinterland

¹² A. Losch, *The Economics of Location*. Trans. Woglom and Stolper, 1954; E. M. Hoover, *The Location of Economic Activity* (New York, 1948); W. Isard, *Location and the Space Economy* (New York, 1956); C. Ponsard, *Histoire des théories économiques spatiales*, Paris.

¹³ P. Sargent Florence, chapter on Industry in West Midland Group on Post-War Reconstruction and Planning, *Conurbation*, 1948.

¹⁴ P. Sargent Florence, "Economic advantages and disadvantages of metropolitan concentration", *The Metropolis in Modern Life*, Ed., R. M. Fisher, New York, 1955, and other works by Florence.

¹⁵ M. J. Wise, "The role of London in the industrial geography of Great Britain", *Geography* (London), xli, 1956, pp. 219-232; J. E. Martin, "Industry in Inner London", *Town and Country Planning* (London), 1957.

¹⁶ G. R. Allen, International Centre for Regional Planning and Development (I.C.R.P. and D.), (British Group), *Report on Study Conference, Economic Forces Leading to Urban Concentration*, 1959.

¹⁷ Colin Clark in I.C.R.P. and D. (British Group), Study conference op. cit.; Colin Clark, "The economic functions of a city in relation to its size", *Econometrica* (New Haven), No. xiii, 1945; F. S. Chapin, "How big should a city be?" *Planning Outlook* (London, University of Durham), No. II, 1950-1952, comments by R. Auzelle, "Town Planning Adm. in France", op. cit., on transport losses in Paris.

¹⁸ Chauncy Harris, "Functional classification of cities in U.S.A.", *Geographical Review*, 33, 1943, pp. 86-99.

¹⁹ P. S. Florence, in Fisher, op. cit.; A. E. Smailes, *The Geography of Towns* 1953; A. E. Smailes, "The urban hierarchy in England and Wales", *Geography* (London), No. 29, 1944, pp. 41-51.

²⁰ A. E. Smailes, "The analysis and delimitation of urban fields", *Geography* (London), No. 32, 1947, following earlier works of Christaller, Dickinson and others.

relations. The interdependence of cities and surrounding tributary areas has been clearly shown.

In assessing urban developmental possibilities economic base theory has been frequently used. In this theory the economic base of a city consists of those activities which produce goods and services for markets outside the confines of the city itself.²¹ Such industries are termed basic. The remaining activities producing for the city market are termed non-basic. The theory is criticized by Artle as too narrow to provide reliable data for planning purposes, neglecting, as it does, the importing side of the city's activities.²²

Artle's own work,²³ on the economy of Stockholm, suggests the applicability for planning of economic studies of input-output analysis methods. He analyses the flow of goods and services and financial receipts to obtain a picture of the interdependence between Stockholm and the rest of the world. Peacock and Dosser²⁴ have shown that information on regional economic relationships is essential to the successful application of government policy for areas of regional unemployment. The approach appears to be a most promising one: among the handicaps to its development is a lack of sufficiently detailed economic statistics of urban areas. Stockholm is well documented statistically; but statistics elsewhere are usually very inadequate.

COSTS OF INDUSTRIAL MOVEMENT

Policies of decentralizing industry have been applied with the aims of: (a) preventing the further growth of certain metropolitan areas and of reorganizing the land-use pattern of those areas; (b) assisting the redevelopment of the economy of areas of regional unemployment or industrial decline; (c) diversifying the industrial structure of areas that possess only a narrow range of industries.

The measures employed (e.g., systems of control, financial inducements, trading estates, etc.) have had some success, though of a limited character. Probably more success has been achieved by policies of limited decentralization (e.g., the new towns around London) than by attempts to establish new industry in development or distressed or one-industry areas.

The success of industrial decentralization programmes has been limited by the extent to which industries remain tied to metropolitan areas by economies of linkage and urbanization.²⁵ It may be that the amount of "foot-loose"

industry is not so great as planners have often assumed. Nor is the type of industry that can be easily persuaded to move to a development area always the most useful type from the point of view of the economic rehabilitation of that area.

Comparative studies of locational costs, contrasting locations in metropolitan areas and those in areas of regional unemployment, have been made but are insufficient to permit unqualified generalization. Certain conclusions have been drawn, however, regarding the type of industry most suitable for introduction into areas of regional unemployment.²⁶ They should be key industries, that is, industries with a high capacity to promote the growth of the regional economy; industries that are likely to benefit from a rise in total incomes in the economy at large (e.g., consumer durables); industries with a high employment creating capacity; industries that will not suffer from severe locational disadvantages.

In producing a genuine balance of industrial development between the various regions of a country, we should consider the use not only of devices for restriction and encouragement but of active measures to promote the positive locational attractions of areas alternative to the great cities. How far can the widening of the economic base of a region be assisted by programmes of public investment to regional needs?

A partial answer may be to undertake calculated programmes of regional investment, upgrading the facilities of alternative areas which may thus draw off potential development from the congested areas. The alternative areas and criteria to be employed would need to be very carefully selected.

METROPOLITAN LAND-USE PATTERNS

The localization economies obtained by industries lead to the development of highly specialized areas of land use within metropolitan areas. As metropolitan areas grow in size the tendency may be for a sharper pattern of specialized trading, industry, cultural activity, etc.

The growth of service industries, especially of a commercial character, is leading to the increasing concentration of office employment in many metropolitan cities. In London attempts are being made by persuasion to decentralize offices to suburban areas. Positive controls on the location and extension of office premises have been suggested. But as yet too little is known of the forces tying office locations to city centres. Commercial linkage may be as strong a force as industrial linkage.

Studies of urban land values are of fundamental importance for metropolitan area planning. In growing urban areas the accretion of land values acts like a chain reaction, arising from the inertia of land-use patterns and scarcity of urban land. Legislative and planning decisions affecting urban land use should be based on more accurately recorded and co-ordinated information on land values. The use of contour maps of

²¹ J. W. Alexander, "The basic-nonbasic concept of urban economic functions", *Economic Geography* (Worcester, Mass.) No. 30, 1954; R. B. Andrews, "The mechanics of the urban economic base", *Land Economics* (Madison, Wisconsin), No. 29, 1953 *et seq.*

²² R. Artle, *Studies in the Structure of the Stockholm Economy*, Stockholm, 1959.

²³ *Ibid.*

²⁴ Alan Peacock and D. Dosser, "Economy policy and localised unemployment", *Lloyd's Bank Review* (London), January, 1960.

²⁵ J. E. Martin, *op. cit.*; E. J. L. Griffith, "Moving industry from London", *Town Planning Review* (Liverpool), No. xxvi, 1955, pp. 51-63.

²⁶ Peacock and Dosser, *op. cit.*

land values (isovals) has been suggested.²⁷ Planning decisions themselves affect land values. The delimitation of a green belt, for example, may markedly affect the values of land around a growing city by inducing a planned scarcity of land.

In growing cities the value of sites in central areas has risen to a high level in relation to that of their buildings. Obtaining full benefits from high-cost land can then be realized only by reconstruction. Consequently, central areas have increasingly attracted attention of private developers. Whereas the private developer's interest is satisfied by piecemeal rebuilding, the wider needs of the community, such as the improvement of traffic conditions, amenities, civic design, etc., can be satisfied only by replanning areas of the centre as a whole. Thus if piecemeal replacement continues, opportunities for comprehensive improvement will be lost.

But high land values are among the greatest difficulties facing comprehensive redevelopment. City authorities do not possess adequate resources to undertake sufficiently wide and comprehensive schemes. To meet this difficulty the creation of a government-sponsored land finance corporation has been suggested.²⁸

The urgent need to house overspill has prompted discussion of the most economic means of providing dwellings. Clark has shown that the pattern of transport expenditure by families related to shopping, recreation and education tends to rise as one moves outwards from the centres of cities but levels off at a distance of seven to eight miles from the centre. He regards this as a factor inducing sprawl.²⁹ Yet, in Great Britain high blocks of flats are expensive in relation to the number of persons housed. Detailed analyses of costs for various types of high block and house development have been provided by Stone.³⁰ In brief, it appears to be cheaper in Great Britain to provide homes in houses on the urban fringe than in high blocks near the city centre. The scope for using high-block residential building as a means of reducing the costs of providing housing with urban amenities appears to be limited on economic grounds.

The effects of highway planning upon urban land-use patterns lie outside the scope of this paper, but is obviously crucial and requires clear evaluation.

RELATIONSHIP BETWEEN ECONOMIC AND REGIONAL PLANNING

In an age in which the significance of the public sector has been increasing and in which national governments become increasingly involved in measures of economic planning, greater co-ordination appears to be necessary

between economic planning and regional planning. Economic plans have profound implications for the distribution of employment and population. At this point the two forms of planning meet. Difficulties in relating them arise partly from the fact that much economic planning is of necessity short-term in character, while physical planners think in terms of longer periods.

The extent to which government interference with the free working of the economy is justifiable remains a matter of controversy. The case for planning, stated by Turvey, is worthy of mention.³¹

(1) In certain conditions personal decisions on land use impose costs on other people or on the community at large which are not reimbursed. Thus, where social costs exceed private costs private interests will not do what is in the social interest and a case for planning interference exists;

(2) Conversely, the development of certain areas may be retarded because the social desirability of development exceeds possible benefits to individual developers. Thus, where social benefit exceeds private benefit private interests will not develop and a case for planned development exists.

The need for effective regional planning is seen to arise from the process of continuous change in economic conditions. The physical environment and daily lives of men and women in towns, cities and rural areas do not immediately readjust themselves. Uncontrolled reactions to economic forces may lead to such consequences as: (a) the collapse of the economic basis of society in some areas; (b) the too rapid growth of conurbations and urban regions in other areas.

TOWARDS REDEFINITION OF PLANNING AIMS

In attempting a new formulation of planning aims we must bear in mind the basic dependence of many countries on the successful development of industry and commerce to improve general living standards. It may be agreed that regional planning will be the more successful as it learns to analyse and assess the strength of economic forces promoting geographic change, and as it aims to utilize and work with those forces, not to cut across them.

A general aim should be the encouragement of the most efficient patterns of location of economic enterprises consistent with the maintenance of high standards of physical environment and social life. Planning is needed to assist in the adjustment of old patterns of population, based on former locational conditions, to new conditions imposed by technical and economic changes. The process of adjustment must be smooth and orderly.

The great economic and social forces making for metropolitan area growth must be recognized and accepted. The forces making for the centralization,

²⁷ Bryan Anstey, "Value contour maps", *Planning Outlook* (University of Durham), No. I, 1948-1950, p. 29; "Isovals", *Journal of the Town Planning Institute*, No. 36, 1949-1950, p. 267; "The distribution pattern of land values in urban areas", *Planning Outlook* (University of Durham), No. III, 1955, p. 5.

²⁸ Civic Trust, *Rebuilding city centres*, 1960.

²⁹ Colin Clark, "Transport, maker and breaker of cities", *op. cit.*

³⁰ See P. A. Stone, "Financing construction of new towns", part V, in this publication.

³¹ R. Turvey, "The case for planning", *Journal of the Town Planning Institute* (London), No. xli. 1955. For a full treatment of the economics of planning see Nathan Lichfield, *The Economics of Planned Development* (London, *The Estate Gazette*, 1956), and full bibliography therein.

coupled with secondary dispersal of population around the main centres, may increase in power as plans for economic integration continue to bear fruit, as transport improvements materialize and as trade continues to increase. Although the agglomeration of population in metropolitan areas produces problems it also creates economic opportunities. Plans should be laid in advance, and adjusted periodically, to minimize congestion and social problems.

Metropolitan areas are changing in shape and form. These trends are likely to continue. To meet them, new concepts of urban development must be formulated. The new concepts must be adequate to provide for what may be termed city regions or metropolitan regions. Policies should aim at leading currents of development into desirable channels. Enlightened regional planning

policies can assist the creation of active, economically inter-related city groups or city constellations which, while preserving the economic advantages of single great cities, can minimize costs and provide satisfying physical and social environments. If these city regions are to be successfully created, their physical and economic planning must be better related at all levels—national, regional and local.

Conversely, in industrially declining areas, reshaping of urban patterns should be envisaged, sometimes involving the abandonment of derelict locations. Improved communications should be utilized to create locational value. Thinking on regional planning must be adjusted to accord with economic realities. Economic integration of countries must be accompanied by integration of regional policies and regional plans.

ADMINISTRATIVE FACTORS OF METROPOLITAN PLANNING IN WESTERN EUROPE*

A. PROTHIN

This paper is based upon replies by various countries in north-western Europe to a questionnaire relating to legislation, organization and administration of physical planning and development. The countries are compared on their approaches to meeting the generally common urban and regional problems resulting from post-war reconstruction, continued urbanization and rapid economic growth. Although the analysis is almost wholly of countries with an advanced economy, there are many evident lessons for countries at all levels of development.

NATIONAL PLANNING

The degree of centralization or decentralization of town planning responsibilities varies considerably from one country to another. Town planning would appear to be essentially the concern of local government. But the importance of local problems to the social and economic life of each country as a whole leads to various degrees of state interference. Thus in every country the organization of town planning evolved from an initial stage of decentralization (direct and exclusive responsibility of the local authorities) towards a certain centralization of control in the hands of the State. On occasion, this process has led to an over-emphasis on centralization. In France, for example, it has been carried so far that a reaction has now set in.

In many countries, this centralizing tendency has been strengthened by the need to make good the ravages of war. Similarly, the support of central low-cost housing developments has engendered government organisation and control. In the Federal Republic of Germany, town planning has been controlled by each province of the federation and this has made town planning hard to analyse. All the countries covered by the survey now have at least one central body responsible for town planning and regional development.

Depending on the country, this body may take the form of an autonomous department with the status of an independent ministry (France, Ministère de la Reconstruction) or of a department attached to a traditional branch of the government (Public Works in Belgium and Portugal; Home Office in the United Kingdom and

the Federal Republic of Germany; Finance in certain provinces). This central authority is always competent to deal with problems indisputably national in scale. The part it plays in matters of town planning, on the other hand, may vary considerably, from that of a simple adviser with no real powers (as in the Federal Republic of Germany) to that of a general manager with universal authority (as in France).

It should be noted, however, that even in countries like France in which town planning is heavily centralized the local authorities retain a considerable degree of autonomy. Development plans are never approved without local authorities being consulted, though the plans may be approved without their consent. At the same time, local authorities are responsible for carrying out most of the public works provided for by the plan; thus, realisation of the plan is conditional on their co-operation.

In the other countries covered by the survey the cost is normally borne by the local authorities. However, the State generally accords them both technical assistance and financial grants (50 per cent in Portugal, between 60 and 100 per cent in Belgium; in the English new towns public funds are advanced at the beginning of operations).

DEVELOPMENT PLANS

Planning areas. It is possible to imagine the entire territory of a country being covered by interlocking development plans, embracing both urban and rural areas. This is the case in England where the whole country is covered by county plans. However, since efforts have had to be concentrated where the problems are most urgent, planning has generally been restricted to quite specific areas. Thus in France, Belgium and Portugal the small rural communes are not planned unless they have historical features worth preserving or cater to tourists. However, in all these countries, every town above a certain size has its own development plan.

Individual planning areas normally coincide with administrative districts, communes for example. However, planning areas may also be defined by physical characteristics: urban centres, whether or not they include several communes or parts of communes, regions forming an economic entity (a coal basin, for example), vacation areas (the Côte d'Azur in France). These development regions may be established by the State

* Background Paper No. 7 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

(in France) or on the free initiative of local authorities working in association (in the Federal Republic of Germany).

The scope of development plans. The similarity of problems and frequent contact between planners from different countries have meant that development plans have everywhere been conceived and presented in a similar way. The purpose of development plans is to define: (1) the tasks to be performed: road construction, installations, public spaces, siting of various public services; (2) the pattern of land use: (a) the boundaries of the planning area and zones; (b) the building regulations applicable to each of the zones or parts of zones (siting of structures with respect to roads and to each other, maximum development density, maximum and minimum heights of structures, minimum area of lots, percentage of parking space, specifications for service roads, regulations relating to subdivisions and groups of buildings, easements, etc.); (c) special regulations, for example, those prohibiting building on particular sites, especially those close to certain monuments.

Development plans are generally presented both as drawings and as written reports. They may be master plans, that is, plans which only indicate the main installations and zoning arrangements. Or they may be detailed plans, defining the precise conditions under which the various areas are to be developed, that is, plans from which models can be built and which define the siting and volume of new construction, either throughout the planning area or simply at certain points within it. These two systems can be superimposed on each other, the master plans laying down the general proposals, the detailed plans applying them more precisely to specific parts of the planning area.

All countries surveyed now follow this practice. Although there was originally a tendency to work with detailed plans at the start, the need for constant adaptation finally led to the use of master or general plans supplemented by a series of local plans relating to different parts of the planning area.

However, detailed plans are not always prepared. In France, such plans are only prepared when a large-scale construction project is to be undertaken, for example, when a new neighbourhood is to be built or an old one rehabilitated. In Belgium the whole country should in principle be covered by detailed plans; actually the latter are only prepared as needed.

In every country the documents accompanying the plans include: (1) a set of regulations, with the force of law, fixing the controls to which the various parts of the planning area are subject; (2) documents relating to the principal public services, for example, water supply and sanitation; (3) financial proposals.

Preparation and approval of development plans. Depending on the country, development plans may be initiated either by the central government (France) or, more frequently, by local authorities (e.g., Portugal). But the final approval of development plans is everywhere the prerogative of the central government.

If the preparation of a plan is the responsibility of the local authorities, it is up to them to lay their proposals before the higher body (as in the United Kingdom). Where the initiative is held by the central government (as in France), the local authorities must be consulted and their objections and suggestions generally taken into account.

In every country the official procedure next provides for an official consultation among the various government departments, the central authority responsible for approving the plan reserving the right to settle any differences that may arise. In Belgium, this function is performed by a consultative committee of various government departments. In France, the government departments hold a conference lasting two months. Various consultative committees appointed by the different departments to study specific problems (hygiene committees, committees for historic monuments, etc.) also participate. In the United Kingdom, government departments first consult at the local level; then, when approval of the plan is requested, the Minister arranges consultations at the national level.

All countries in question also hold public inquiries prior to approval. These may last from fifteen days to three months. The plans are approved then, either by the head of the executive branch or the Ministers concerned. In France, however, the less important plans are approved by the *Préfet*, who represents the State in the departments.

The procedure for preparing plans is always very protracted. Moreover, in certain countries (France, Portugal and the United Kingdom), the Government has introduced an intermediate stage (period of consideration, provisional approval, publication of plans), during which the plan has certain initial effects and can be opposed by individuals. All the countries concede that the plan approved may differ from that submitted to public inquiry, provided that the differences are not too great. Otherwise the plan must be re-subjected to the process of official scrutiny. In France the central government is perfectly free to use its own judgement. In Belgium and the United Kingdom, where plans are initiated by the local authorities, the central government can refuse its approval and state its requirements.

The effects of development plans. Development plans provide for works to be carried out by public authorities and for regulations governing private land use, applicable to individuals. Public works usually involve subsequent expropriation. In the United Kingdom, and particularly in Portugal, the inclusion of a particular project in the plan does not dispense with the normal expropriation procedure. The plan merely serves to justify this procedure. In Belgium, expropriation is possible, provided the development plan specifies the lots to be expropriated. Obviously this will rarely be the case, since development plans are not sufficiently detailed for the property destined for expropriation to be instituted immediately. Complete expropriation proceedings normally have to be instituted later. In France, on the other hand, approval

of a plan carries with it a declaration that the works contemplated, which are listed in an annexe, are in the public interest. In this way the expropriation procedure is much curtailed.

In France and Belgium, property must be expropriated within a period of ten years; in France this time limit can be extended. In Belgium, France, Portugal and the United Kingdom, property needed to carry out a plan is reserved, that is, the owner cannot obtain permission to build on such property. However, an Englishman can call upon the Government to acquire his land if, as is often the case, its value falls because permission to build has been withheld. If a Frenchman requests that his land be purchased, the Government must purchase it within three years of the request; otherwise permission to build cannot be withheld.

Regulations governing land use take the form of restrictions on property rights, generally on the right to build. The question is whether or not these restrictions give grounds for compensation. In Portugal they do not. In the United Kingdom the owner can obtain damages and interest if he is absolutely forbidden to build on his property. In France such restrictions do not give grounds for compensation. In Belgium they do. In France, compensation is fixed, should the need arise, by the Government Tribunal Administrator; in Belgium by the courts.

There are no fixed rules relating to construction during which a plan is being prepared. Normally, private individuals remain free to dispose of their property as they wish, within the framework of regulations in force at the time. However, in all countries in question, authorities enjoy certain discretionary powers which permit them, for example, to refuse permission to build where building might prejudice a project probably destined to form part of the final plan.

Since these powers might expose private citizens to arbitrary authority, some countries have surrounded them with limitations: (a) in France these powers can only be exercised within a certain period, at the end of which the development plan will have to be approved; otherwise permission to build can no longer be refused; (b) in France and the United Kingdom applications refused by local authorities may be appealed to higher authorities, who may grant them; (c) in both countries parties affected may also claim compensation, if the approved development plan does not justify the earlier refusal.

TOWN PLANNING PROCEDURES

To undertake systematic development of new neighbourhoods, new towns and industrial estates and carry out urban renewal programmes, public authorities must be invested with certain powers. The problems involved can be grouped under three headings: problems relating to property, problems of administrative co-ordination, and financial problems.

Problems relating to property. The systematic and comprehensive development of new neighbourhoods

and new towns is only possible if the public controls the necessary land. In Austria and in the Federal Republic of Germany the various parishes have traditionally been property owners and controlled large areas of land, on which to organise their development. Since the Revolution of 1789 few French communes have held reserves of land. It is often necessary to dispossess private property owners through expropriation, not only to construct roads or public buildings but also to acquire property for resale to given developers in carrying through a plan.

Thus, public authorities in all countries examined have recently been invested with these powers. In most cases the powers were not granted readily. For, although it is easy to persuade the public that expropriation is necessary to build roads and schools, it is much more difficult to persuade a property owner to surrender his land for subsequent resale to a private developer. Expropriation procedures have everywhere been extensively employed to rebuild war-devastated cities on a new basis. Still, public authorities often hesitate to make use of these powers to create new neighbourhoods from scratch.

Moreover, the stake in expropriation varies from country to country, depending on the form of construction typically adopted. In the United Kingdom, where most people live in single-family homes with their own gardens, this use of expropriation is rare. It has been used primarily to create new towns. In France, on the other hand, the housing programme aims principally for the construction of large developments, often comprising several thousands of apartments, with multi-storey buildings occupied by numerous families. To build on this scale, enormous areas of land must be available and this means expropriation. Thus, the state has recently been expropriating several thousands hectares of land every year.

However, being an exceptional device, this use of expropriation has generally been surrounded by various safeguards. Expropriation is normally impossible in Belgium and the United Kingdom until after the development plan has been approved. In France authorities can resort to expropriation either to proceed with an approved plan or to clear the way for housing or industrial developments even without a plan. Nevertheless, approval of a development plan in itself does not itself confer power of expropriation. Every country insists on a special procedure, though based on provisions of the plan.

In none of the countries do property owners have the right to forestall expropriation by pledging themselves to use their land in conformity with the plan. It is understood that in such a case the authorities will always hesitate to press the expropriation procedure. Generally, though, the object of compulsory acquisition is to assemble a site for a large-scale development, a development too large and unified for individual conformity.

A new system connected with expropriation has recently been introduced in France. The Government

can establish zones within which the communes have priority in acquiring property intended to be put up for sale. Property is acquired at a fixed price, as provided for in cases of expropriation, and is a preliminary step to subsequent general expropriation.

In certain cases, especially in areas intended for building individual homes, expropriation may be rejected in favour of a planned redistribution of land among property owners. This method has been widely used in rebuilding war-devastated towns. Such procedures—compulsory for private individuals—have been adopted in many countries, for example, Belgium, Czechoslovakia, France and Portugal. They are unknown in the United Kingdom.

Decision to redistribute property is arrived at unilaterally by the Government. But in practice the chances of success are slim unless a minimum number of property owners give their consent. In Belgium, the redistribution plan forms an integral part of a development plan and must be approved at the same time. The approval procedure in Portugal is the same as that applicable to development plans. In France, the approval procedure is analogous to that applicable to expropriation and is preceded by a public inquiry. French property owners concerned are also compelled to form an association which may be made responsible for certain improvements. On the other hand, the association may be subsidized by the Government or local authorities.

There are various ways of inducing land-owners to comply with the requirements of a development plan. Government may serve notice on a landowner to build within a certain time or surrender his property to a developer, or may raise taxes on land improperly used. Several countries have considered the idea of special taxes but so far none of these proposals have been given the force of law.

Problems of administrative co-ordination. Large-scale town-planning operations bring into play numerous government departments and various sources of finance. They often cover areas administered by several neighbouring local authorities. Such operations pose delicate problems of co-ordination. They call for a flexibility of action and reserves of trained personnel which local authorities very often do not possess. The larger or more complicated projects must be under centralized control. Thus most countries have recently introduced administrative innovations such as: (a) associations of local authorities; (b) public agencies, answerable to the Government or the local authorities, specializing in land acquisition and development; and (c) semi-public companies, combining public and private capital, which the state and the local authorities entrust with large-scale operations.

The English have set up development corporations to organise the construction of new towns. These bodies are offshoots of the central government and in no way depend on the local authorities. The French have set up management corporations, which may be either public agencies, that is, offshoots of central or local

government, or companies controlling both public and private capital. The task is to organize the development of new towns and neighbourhoods. They have general powers to acquire land by compulsory purchase and act in concert with the local authorities. On the other hand, the rest of the countries covered by the survey continue to observe the traditional formula of associations of parishes (communes). Then again, all the countries concerned have set up numbers of semi-public bodies, entrusted with the provision of certain services, such as the supply of water, low-cost housing, etc.

Financial problems. Town-planning operations often yield returns, since they lead to the resale of expropriated land to development groups. Thus from the financial point of view they require: (a) treasury facilities to the extent that expenditures are balanced by receipts; and (b) budgetary credits, if the operation is not in financial balance. All the countries have made provision of medium or long-term public loans for these organizations. Belgium guarantees loans to acquire land and carry out works. On the other hand, the communes may receive loans at favourable rates from the *crédit communal*, a commercial institution of a semi-public nature. English development corporations responsible for the construction of new towns receive Treasury loans. A Portuguese semi-public banking institution, the *Caixa Geral de Depositos, Credito et Providencia*, extends fifteen-year or twenty-year loans at 3.5 to 4 per cent for various development works. In France, the local authorities and management boards may receive twenty-year loans at 5.5 per cent from a semi-public institution, the *Caisse des Dépôts et Consignations*, to carry out development works. They may also receive short-term (three-year, renewable) Treasury loans at 2.5 per cent for land acquisition purposes. The State may also take responsibility for part of the interest on loans negotiated on the financial market.

All countries have also made provision for various forms of state aid. The State takes responsibility for the operating deficits of the development corporations in the United Kingdom. Local authorities undertaking neighbourhood improvements may be eligible for certain grants, usually 50 per cent of the expenditure. Portugal also contributes 50 per cent of certain town-planning projects, particularly roads. Belgium grants over 35 per cent of the cost of minor road improvements, 65 per cent of the cost of highways and sewers, 80 per cent of the cost of water supply projects and 100 per cent of the cost of supplying services to public housing developments. In France, the grants available for financing various public services varies between 20 and 50 per cent reaching 85 per cent in the case of schools. The Treasury may grant lump sums of project costs, for the general financial stability of large-scale development corporations.

APPRECIATION OF LAND VALUES

Urban development means that land values increase through improved public services. Many countries have contemplated recovering the amount of such appreciation

by various means, including: (a) recovery of the increase in value between two sales; (b) taxation of the increase in value between two sales; (c) partial recovery of increases in value by means of periodic property valuations; (d) recovery of increases in value linked with a given public works project; and (e) direct recovery by requiring a developer to pay a certain lump sum, when the building permit is issued, etc. However, the idea of recovering such increments is linked with that of compensation for depreciation due, for example, to restrictions imposed by the development plan. Certain countries have attempted to set up a comprehensive system covering both problems.

The Federal Republic of Germany in 1910 and the United Kingdom in 1912 attempted to recover increases in the value of land by periodic property valuations. These attempts soon failed, due to the excessive complexity and burdensome cost of the valuation machinery, the difficulty of making a sufficiently accurate appraisal at different times and the numerous disputes which ensued.

In 1947 the English tried a new and daring system. In view of the fact that eminent domain historically belonged to the Crown and private individuals held only the useful domain, the State took over the development rights, individuals retaining only the right of user. Essentially, this meant expropriation in favour of the State of one element of the rights of ownership, that of changing the use to which land is put. This expropriation was to be for a consideration. The State, having become holder of the right to build, would only surrender this right against a charge. This solution had the merit of solving simultaneously both the problem of development values and that of compensation for depreciation (the latter, as it were, being taken care of in advance). Unfortunately the British Government ran into difficulties applying the system and in 1951 abandoned it.

In Belgium, certain communes have imposed an annual tax called the town-planning tax to make the owners of affected property pay the annual installments on loans negotiated by the communes to finance road construction and public works. Portugal has a betterment tax on rural property converted to urban use within the framework of a duly approved development plan. It is theoretically possible in France to recover up to 85 per cent of the increase in value due to betterments. However, the difficulty of assessing the amount of appreciation and the complexity of the procedure have meant that the results have been very disappointing. In the Federal Republic of Germany (and in France, in the departments of Alsace and Lorraine, which were part of Germany before 1918), land-owners, whose property borders on a new road, can be compelled to contribute to the cost of this road.

Thus, the problem of the enhancement of land values remains one of the central problems of town planning. Unfortunately, no country has yet found a solution that would make town planning self-financing.

So far, the only really effective method has been to expropriate the development area and resell the property

after it has been developed. In this way the public is sure of getting the full benefit of the improvements it brings about. But expropriation is a delicate business. It cannot be applied too widely to a free society.

In many countries, the accelerated development of industry has been concentrated at a few points so that certain centres have experienced excessive growth, while other various regions have fallen behind. Thus, many Governments are now trying to restore economic order over their territory by means of a judicious redistribution of production calculated to ensure optimum utilization of natural and human resources. Various means are employed: to define the place of each region in the economy and its development needs; to accelerate development of under-developed areas by attracting new industry to them; and to restrain the development of over-industrialized areas.

The whole country of France is to be covered by a system of regional schemes, prepared within the framework of an over-all national plan. The latter, based on demographic projections, will tend to create five or six regional metropolitan areas of considerable size. These will give an economic, social and cultural stimulus to regions previously neglected and to counterbalance the Paris region and the highly developed regions of the north and north-east.

The national plan and the corresponding regional schemes have no legal consequences for private individuals. They simply lay down guiding principles for the public authorities, principles applicable both to public works policies and to the direction, by means of credit arrangements, of private investment.

In the United Kingdom, as noted, the whole country is covered by county plans, which lay down principles applicable to national public works policies and to the direction of industrial investment towards depressed areas. Other countries still have no plans on a national scale. However, the principle is being studied in virtually all of them.

The French Government is anxious to restrain development of the Paris region and to direct industries to less developed regions. New industries can only establish themselves in the Paris region with special ministerial approval, and this approval is very difficult to obtain. This requirement has just been extended to offices. In England, too, the establishment of new industries in large urban centres is very strictly controlled. Moreover, since the war the British Government has undertaken to transfer industry from the Greater London area to new towns especially built for this purpose.

In all countries surveyed, much remains to be done in this area, which is essential to balanced development. Today, modern states are enlarging the scope of planning from towns, a problem of harmonious local organization, to the organization of land use and natural and human resources on a national scale. However, so far there has been little relevant legislation in any of the countries. We believe that this problem is fundamental for the future.

ADMINISTRATIVE CONSIDERATIONS OF METROPOLITAN PLANNING AND DEVELOPMENT*

LUTHER GULICK

The first step in any administrative venture is (a) a belief; and (b) an act of will. The belief involves both a faith that something can be accomplished by effort and a confidence that the thing sought is worth the effort. This belief in values and in the high probability of accomplishment are fundamental in the administrative process.

Closely related to this belief, must be the determination to act. This involves not alone an intellectual and spiritual understanding and attitude, but also the putting out of energy, that is, action itself. This, too, is fundamental.

These facts are peculiarly significant for metropolitan planning. There is no point in thinking or talking about metropolitan planning if we are convinced that urbanization is a natural or instinctive phenomenon like nest building in birds or the pattern of coral reefs, ant hills or wasp nests. Do we really think that man can have a determinative influence on the composite structure and pattern of his communal settlement, especially industrial settlement, or do we feel that whatever we do, the end result will be about the same?

Is it significant that oligarchic cities, democratic cities, socialist cities, communist cities and theocratic cities, ancient and modern, are all so similar? Is it significant that commercial, industrial, governmental, administrative, educational and amusement cities, are all so similar irrespective of their cultural *milieu*? Is it significant that planned cities and unplanned cities are functionally so much alike?

We can, of course, recognize the impact of changing technologies, especially military technology, sanitary technology, construction technology and, emphatically in our times, transport technology. But are the changes which follow these technological modifications inevitable? Do they each carry their own built-in template? Will the results they produce, as to function and human satisfaction, prove about the same, regardless of planned administrative action?

Men have on rare occasions made new cities out of whole cloth, usually for governmental, military, recreational or industrial purposes. Are these permanently superior for mankind because they were planned or do

they lose their bright virtues as the newness wears off?

This is not the place to answer these questions or to review the evidence. I merely state the questions to emphasize the importance of the affirmation of faith required to justify metropolitan planning, and to assert the significance of the will to act, both as essential elements of the administration of planning.

In summary I will say: we start by believing that man can influence the pattern of his settlement in urban areas so that this pattern will be for him and his children more livable, more wholesome, more convenient, more efficient, and more ennobling than it would be if left to natural forces and unplanned and uncontrolled initiative. Secondly, we are determined to act and have confidence that such action will produce results, results which mankind will appreciate and make sacrifices to achieve.

PRIMARY PLANNING PROCESSES

In the administration of planning it is necessary to recognize a number of interwoven, but functionally distinct primary processes. These I would list as:

- (1) Definition of the planning mission and its several segments;
- (2) Statement of given factors, or of the method of arriving at these factors;
- (3) Make the defined parts of the plan or plans, including the allocation of resources and the timetable of action;
- (4) Reconciliation of conflicting interests both from within the organization and from without, and the modification of plans accordingly;
- (5) Adoption of the plan or plans thus developed;
- (6) Specific issuance of action orders to carry out the plans as adopted;
- (7) Action in accordance with orders, with minor modifications in doing the work as found necessary;
- (8) Progress reporting on the steps as they proceed;
- (9) Review of these reports and direct observation of the results achieved, to make certain that the plans are being carried out;
- (10) Examination of the resulting social, economic,

* Paper submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

physical and other impacts to see if the plans as carried out are in fact achieving the objectives sought;

(11) Feed-back modification of analyses, plans, reconciliations, decisions, and orders to meet the new conditions disclosed;

(12) Reporting at each significant step to the appropriate authorities and to the appropriate publics.

In administration each of these twelve processes must be specifically assigned as a duty, with power, to some agency or individual. While it is generally desirable to concentrate each such step in the hands of a single individual or agency, this is not always possible.

The assignment of each step will be controlled by the structure of authority within which planning is to proceed. The adoption process (step 5) for example, must involve the central executive, the various organs of legislation, and each level of decentralized authority (geographic or functional). Thus the skeletal design of the government must be grasped before one can determine how the planning organization may best be structured, and at what points each of the segments designated above can best be articulated.

Furthermore, planning cannot be structured differently than the action agency itself. If a government is highly centralized, planning also must be highly centralized. The delegation or decentralization of planning authority can extend only so far as the matters to be dealt with are also delegated or decentralized.

If, for example, the central government controls the allocation of water, it can delegate to subordinate local governments authority to make plans as to water use only within a framework of national allocation. If the central government controls all foreign exchange, imports and exports, it cannot permit each major urban area to draw its own city development plans and go its own way regardless of national requirements and goals. However, these national needs and objectives cannot be set without a thorough grasp of the local needs; and this cannot be achieved in a vacuum by central bureaucrats.

ENFORCEMENT TOOLS FOR PHYSICAL PLANNING

It is important to identify the nature of the enforcement tools which are available in support of town planning. Among these one would list:

Public control over the city map with its designation of street widths, grades, open spaces, street access points, building lines, etc; zoning, that is, the establishment of land-use permits and restrictions; health and safety codes controlling construction and occupancy; public land ownership; public ownership of easements and development rights; major public works, especially those involving ports, transport, water and sanitation housing, and employment-creating investments; public control over power, water supply, sanitation and other utilities; public control over individual and mass transport; governmental authority to use the public credit and taxation for planning projects; tax incentives and

penalties; and inheritance laws, especially those related to urban land.

Of these control instruments, it will be observed, the first three are by nature primarily local, while only the last, the laws of probate, are inherently central. The remainder have both local and central aspects.

On a broader scope the underlying constraints which condition metropolitan planning are now imposed chiefly by national economic and social policy and are thus beyond purely autonomous local control.

A first group of central governmental policies which determine what can be accomplished through local planning include national policies on imports, exports and exchange. National taxation, credit and price policies and migration restrictions are, of course, involved. A most significant set of forces is released by national policies on transport, water use, and the allocation of other scarce resources such as fuel, power, timber, cement and steel. Government investment programmes, especially for housing and urban utilities, and the location and nature of government-created industries are extremely powerful.

A second set are social and political policies rather than economic. These include the fundamental policy of the national state on (a) human welfare and security; (b) the extent to which production and distribution shall be public or private; and (c) central determinations about rural life, industrial concentrations, and location of urban employment.

Because of the positive rather than passive nature of the contemporary national state, it is important to understand and give appropriate weight to the imperatives arising from national social, economic and governmental policies. A major lacuna of town planning in the past has arisen from the failure to note and harness these broad national policies as constructive forces for metropolitan planning and development.

NATURE OF LOCAL CONTRIBUTION IN PLANNING

The important interrelation which exists between national planning and metropolitan planning must not obscure the unique contribution which can be made by local planning and local plan enforcement.

Since the dawn of history, men have loved and revered their great cities. Even the rise of national states has detracted little from this attachment. It would be difficult to name any other broad human structure which makes the same appeal to men, or exercises such an ennobling sense of belonging to greatness as does the great city. It is these loyalties and motivations which are released and harnessed when the urban community itself is organized and empowered to take action for the conduct and betterment of its community life, and it is these forces which are canalized when such a community is given the power to plan its own future, and to carry out these dreams for future convenience, efficiency and nobility. These are among the forces which raise up

unselfish leaders and loyal but vigorous followers in the cause of civic virtue.

An important element in the success of any public venture is, of course, the co-ordination locally, at the point of impact, of the various programmes of modern government. Housing, transport, sanitation, education, recreation, and all other matters, to be most effective, need to be developed in mutual harmony. Such co-ordination and timing do not arise by accident. They must be induced by inter-related planning and administration. And they can be maintained in balance only by men who see what is going on locally from day to day. This is most difficult for central governments, especially when the government is far removed from the local scene. The drive to get things done comes from those who are directly and personally concerned, not from distant bureaucrats.

In any society, whatever its system, there is a tremendous gain from public understanding and voluntary participation on the part of enthusiastic and concerned individuals. Such understanding, education and sense of participation arise much more naturally when community affairs are entrusted to the local community and its social, economic and political institutions. Planning is a part of this local involvement, especially in a complex or changing situation.

The national planning effort gains also from the existence and functioning of vigorous and partly autonomous local planning agencies. They help the national planning agency to understand local needs and desires in a way that could never be known solely through central channels of communication. This need for contact with local planning agencies working independently but in concert with the national planning office is also paralleled by a similar need for planning units within each ministry or department.

Thus local planning, and its concomitant, locally delegated authority to administer, can make several important contributions to national planning. It enriches central knowledge; it induces better co-ordination of programmes at the point of impact; it releases and harnesses those human energies which spring from local pride and sense of belonging; it prompts human consent; it educates men in community life and strengthens every step of the administrative process. These are of special significance for administration and are not inconsiderable contributions.

PLANNING PERSONNEL

A neglected aspect of planning administration involves the recruitment, training and employment of the personnel which constitute the planning staffs. Too many people have forgotten the lesson which has been learned in legal administration, public health, fiscal administration, and military administration. No one of these separately institutionalized activities can go forward without a specifically trained cadre of manpower.

However, training for planning and the recruitment of men for planning staffs presents a far more difficult set of problems than is encountered in the long established professions because planning, like general administration, involves:

- (1) A generalizing temperament and capacity for synthesis and programme development;
- (2) An ability to understand and use, but not be subdued by, the various major disciplines, such as the several sciences, engineering, economics, sociology, political science, law, accounting, statistics, electronic data processing, psychology, education, public relations and practical politics;
- (3) An aptitude for work with others;
- (4) A commitment to social values.

There being no sure way of picking such individuals early in life, and no established or proven curricula for inculcating such qualities, knowledge and skills, we must resort to experimental testing of various approaches, leaning heavily on apprenticeship and supervised work experience, specifically designed for its educative and prognostic values. We must recognize also that planning as a distinct process is a new social invention, and that it cannot be brought to full fruition as a part of the structure and operation of government without a successful meeting of the personnel requirements.

THE BUDGET AND METROPOLITAN PLANNING

Of no less significance is the status of metropolitan planning in the budget process. This relationship exists both in the national administration and in the local administration. There are at least three points on the expenditure side at which metropolitan planning is likely to find recognition: (a) in current expenditures for the planning agency or agencies; (b) in connexion with special research projects or in grants for planning or research; and (c) in the proposed capital investment allocations. It is of great importance that no capital investments be authorized or publicly proposed by any agency of the government before the advice of the planning agency has been secured. Such procedure is normal as to legal matters, fiscal matters, or engineering matters. No agency of the government would think of proceeding with a project without consultation on these aspects with the appropriate colleagues. The same significance applies to planning. Nothing can make a mockery of planning so quickly as governmental investment decisions without benefit of the comprehensive planning approach.

The revenue side of the budget will also have its metropolitan planning items. These will include subventions and service contracts as income items, as well as prognostications of revenues from specific planned investments and improvements. While the planners cannot supersede fiscal authorities in fixing such revenue estimates, the planners should take appropriate part in developing estimates related to their plans.

However, budgeting cannot take the place of, nor ignore, planning and the functionally organized planning agencies. Where the budget does pre-empt planning, fiscal-minded officials usually seek to dominate governmental policy. The recognition of this danger is especially important for metropolitan development.

IMPACTS ON THE ADMINISTRATION OF METROPOLITAN PLANNING

The philosophy as well as the administrative structure of metropolitan planning must grow out of the social, economic and political structure of each given society, and must be designed within the imperatives of that culture. Such planning must be institutionalized within the structure of each national state, wherever urbanization, industrialization and rapid social change is going forward. Only the completely static and traditional society can escape the need for planning.

Metropolitan planning is a component of, but must be subordinate to, national planning. It can function only within the parameters established by national plans, within the limits each nation finds necessary to impose national controls. In societies with a broad dependence on the market mechanism and on individual decisions, the national imperatives will be few and indirect. Local

and metropolitan planning will have a broad scope and responsibility. In socialist states, the national imperatives will be more extensive and highly specific. Local planning will be correspondingly delimited.

Though metropolitan planning is thus related to national planning and national controls, there is a distinct and important function which cannot be performed adequately for the metropolitan area by centralized and national planning alone. Locally based metropolitan planning is necessary to galvanize local leadership and community pride; to release and harness local understanding, consent and enthusiasm; to produce co-ordination of governmental programmes at the point of impact; and to develop for national planning an intimate understanding of local needs and desires.

Neither trained personnel nor model planning laws and administrative structures will bring about the progress mankind seeks through planning unless a society and its leaders develop a faith that man can advance his pattern of living through co-ordinated forethought and effort and unless that society has a will to act together to achieve defined community goals.

Thus we start and end the administrative process with an affirmation of faith and the mobilization of action.

CONTROL OF URBANIZATION*

BOLESŁAW MALISZ

The problem of promoting new cities is now widely discussed. Some theoreticians are even inclined to treat the new cities as a "panacea" for all difficulties connected with the contemporary urbanisation processes. Such may be the case in some developing countries, especially those with one dominant city. But in Poland there is a feeling that the problem should be set more broadly.

Poland is a country of 30 million people living on 314,000 square kilometres. Half of the population lives in some 900 cities, two of which have over 500,000 inhabitants, one being Warsaw with 1.2 million inhabitants; seven range from 200,000 to 500,000 inhabitants, and thirteen from 100,000 to 200,000 inhabitants. Most are of medieval origin, and the whole network is relatively well balanced as far as the size of cities is concerned. According to the official forecast, by the year 1980 the total population will reach 37 million persons, of which 22 million will live in cities. That means 7 million additional people will have to be accommodated in cities within this period.

PROBLEM OF OPTIMUM REGIONAL DISTRIBUTION OF POPULATION

In these circumstances the question arises as to how this increase of population can best be distributed over the country, and what the optimum urban pattern is as far as the new cities and the expansion of existing ones is concerned.

Till now in the planned economy in Poland the aim has been at checking the spontaneous growth of large agglomerations and to level out the inherited disproportions in economic development between various parts of the country. But this policy was not sufficiently based on proper and measurable criteria.

The task of an optimum distribution of population increase within the boundaries of a region (*voivodship*)¹ can be put in the following simplified form: given is the number of population and its present distribution within a region; the increase of this population within a period of time is also given. This is, of course, calculated on the

basis of a prognosis for the natural increase of population and on an estimation of migration movements all over the country; the task consists in finding the future optimum distribution for this increase.

In solving the task thus formulated, the regional planner has several premises at his disposal.

First, he is able to calculate the functionally necessary part of population connected with agriculture, on the basis of data concerning the introduction of technical improvements in agriculture and the intended changes in the agrarian structure. Thus, assuming the future standard of service facilities in the country as a whole, the regional planner can also calculate the future rural population. This way he obtains at the same time the future urban population, and—by subtraction of the existing one—the increase in urban population which is to be distributed among the urban settlements, existing and new.

Secondly, the regional planner calculates that part of the urban population increase which is needed in the so-called site-bound industries,² as far as location factors are concerned. In contrast to that relatively easy procedure, the task of allocation of the non-site-bound industries and the distribution of services is more complicated. Lacking sufficient and verified policy in this field, the regional planner uses, as a rule, the conventional formula of proportional distribution of population increase according to the present rank of urban settlement.

Thirdly, the regional planner can make use of other criteria. One of them is the thesis that the greater the share of the increase of urban population, the higher the degree of its free distribution. For it is clear that in case of small increase, its distribution will be dominated by the existing urban centres.

All the afore-mentioned guidelines taken together, useful as they are, do not seem to give sufficient ground for the optimization procedure. They still leave a gap which consists in the lack of an analysis of the spatial consequences of a given grade of economic development within the urban area.

THE METHOD OF LOCAL ANALYSIS

The aim of the analysis proposed here is to fill this

* This monograph, submitted to the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964, is an abridged and adapted version of "The analysis of urban development possibilities" published in the Italian review *Urbanistica* (Torino), 1964.

¹ Poland is divided into seventeen *voivodship* districts which are considered economic regions.

² Industries bound to the raw material base.

gap. It is obvious that such an analysis has to be carried out within the framework of local urban planning.

The starting-point for analysing the urban development possibilities is the clear delineation of the area to be surveyed. This could be based on the theory of settlement systems which is now in the making.³ According to this theory, various forms of settlement systems could be regarded as the spatial consequence of mutual interaction of a localized place of work and the adjacent territory, this being analogous to the interdependence of the pole and the field of gravitation. Among various possible ranges of this interdependence, the primary one is the range within which people connected with the place of work are settling. This connexion consists, of course, in the daily journey to work. Consequently, the technically possible distance of these journeys delimits the so-called settlement system. This area, naturally, is the object of local urban planning; it is self-evident that the analysis of urban development possibilities should be carried out within these boundaries. When the spatial relation of various places of work is such that their ranges of daily journeys coincide or overlap, the whole area should be taken into account. This is, of course, the case in more composite settlement systems; the agglomeration or conurbation.

Within the boundaries of an area thus delimited, the spatial possibilities of urban expansion should be carefully studied. The basic aim is to delimit those territories which in due sequence should be developed as urban land.

As main research tasks three groups of studies should be undertaken:

(1) The suitability of land for urban purposes from the physiographical point of view;

(2) The possibilities of changing existing urban land-use patterns; and

(3) The possibilities of extending the network of public utilities.

All three of these groups of surveys are, of course, no novelty in town-planning practice. But the approach to those studies as applied to the analysis of urban development possibilities is different in many aspects.

THE QUANTITATIVE APPROACH

The most important difference lies in the quantitative way of formulating the results. In view of the variety of elements concerned, this quantitative approach has to take the form of calculating money values. The measure of these values is the cost of reclaiming or improving land for urban development.

Within the scope of physiographical factors (e.g., the relief of the land, hydrology, technical characteristics of soil, local climate, etc.) the cost of making a given area suitable for urban development can be calculated by

estimating the improvements which must be carried out.

The cost of changing the existing land-use pattern can be calculated similarly. Here the study should comprise all characteristics of land use, including density, amortization, present use, etc. It is clear that this cost will become higher as the land becomes more intensively used, and the better the physical condition of its existing development. It will consist of the cost of demolition, the cost of substitute construction, and the losses to national economy resulting from the change of land use.

Last, the cost of land development for urban purposes can be calculated for various networks of public utilities (e.g., individual and mass transport, water-supply, the sewerage and power systems). To this end, each of those networks can be divided into three groups of elements: the central installations (e.g., sources of water supply), the main supply lines, and the local distribution network. The cost of the latter element is relatively stable, but the cost of the main supply lines in each public utility depends on their length, i.e., on the location of the so-called "sources" or central elements. That is why even the roughest calculation of costs can be made only on the basis of surveys and studies carried out for various locational alternatives.

Such an economic calculation in all three groups of studies requires a great deal of work. In the case of a large city, a full calculation of costs for the whole area concerned cannot be made without the help of computers. In our country the first experiment has been made in the course of preparing the latest master plan for Warsaw.

This method is to be used only for the largest cities. For the majority of towns, however, more simplified graphic methods have to be adopted. Such a simplified technique consists in delimiting various zones of urban land development possibilities, according to the three main study groups.

THE APPLICATION OF THE THRESHOLD THEORY

When speaking about differences between the conventional and the new method of research work, one should mention the way in which the results of those three groups of studies are interlinked to form a workable synthesis. The main stress should be laid on the fact that up till now each of those three groups of studies has been carried out separately. The process of synthesis took place in the mind of the planner and, consequently, it was unverifiable.

Under the new method all objective features can be checked, and the final result depends on the logical sequence in which all the premises are taken into account. The key element which helps us to integrate all the partial results is the notion of threshold in urban growth.

This notion which to a large extent forms the theoretical basis for the whole analysis, was originally

³ The first outline of this theory has been given by the author in the work "Wstęp do teorii układów osadniczych" [Introduction into the theory of settlement systems], OITEB, 1963.

defined⁴ in connexion with the method of preparing the so-called long-range study.⁵

According to the Physical Planning Act of 1961, urban plans should be prepared as stage plans for the period of the five-year national plan, as long-term plans, now for the year 1980, and as long-range studies. A method for elaborating this last form of urban plan had to be evolved. It was clear from the beginning that the main difference between this form of urban plan and that of plans for definite periods lies in the fact that it is impossible to construct a development programme for a period undefined in time, since such a programme could not be checked by concrete investment aims balanced within the framework of a national plan. That is why the first thing to do was to determine that moment in time for which preparing a long-range study made any sense at all. The solution of this first problem could be based on the simple observation that towns in their spatial growth encounter various limitations; these being due to physiographical reasons, to the technology of various public utility networks, as well as to the structural changes connected with the growth of the city. Of course, these limitations are not absolute. They can be overcome only by disproportionately high investment. This becomes particularly striking when *per capita* costs are considered. The curve of those costs form steep barriers which have been called thresholds.

Thus, for instance, an existing sewerage system can be extended within topographical boundaries, or within the range for which the capacity of the main collectors allows. But when the town in its growth expands beyond such bounds, a totally new sewerage system will be needed, and the cost of that is of a threshold character. In some section the threshold limitation will be formed by a wide river. The expansion of the town beyond the river will require long bridges and new public-utility networks. Similarly, in the domain of communications, ranges could be defined, within which the extension of mass-transport is possible without disproportionately high costs. If, however, such a range is overstepped, the technological characteristics of the existing system will no longer suffice and a new mass-transport system must be provided.

Confronted with a threshold, a town has the tendency to keep within the threshold line, i.e., within the range in which the costs of accommodation of new inhabitants is relatively normal. So, if there is sense in preparing a long-range urban study for some future moment, it must be that moment when the town will face a threshold. It is possible to calculate the capacity for accommodation of new inhabitants within the threshold line.⁶ This number of inhabitants should be compared with the population given by the regional plan for the long-term

period. This comparison helps us find the position of the coming threshold and to know whether the threshold will come before the end of the long-term period or later on. In the former case, we have to be prepared for overstepping the threshold. In the latter case, a long-range study makes sense only when the development planned (for the long-term period) will bring the town very near the threshold moment; in other words, when the planned increase of population will be approaching the threshold capacity.

Town planning practice based on this theory has so far shown some difficulties in the proper interpretation of the threshold notion in specific cases. That is why it seems worth while to return once more to this notion.

It should be emphasized that not all investments which help develop new urban land bear a threshold character. When a town is expanding, many investments of this kind are made. They can even coincide in time, without taking the form of thresholds on the cost curve. In contrast, threshold investments, cannot be carried out by way of a steady extension of existing public-utility networks, but call for the construction of entirely new systems or for comprehensive redevelopment of the existing ones.

This could be explained more clearly by considering the sequence of threshold lines. For each town the first threshold line can be drawn on the basis of a survey of the various built-up areas and of the existing public utility networks. This line is composed of several elementary threshold lines defined for particular public utility networks.

A difficulty in interpreting the notion of threshold is due to the fact that not all limitations can be defined spatially in the form of a threshold line. For instance, it is hardly possible to define a threshold line for an existing source of water supply. In that case, however, the capacity of this source creates a threshold limitation which can be given in quantitative form even when its graphic interpretation is not possible.

Last but not least, limitations of structural character should be mentioned. Such a threshold limitation occurs when the planned increase of population in a definite period calls for radical extension and redevelopment of the main civic and shopping centre. The creation of a new centre and the extension of the existing one will bear on the character of a threshold investment, though the estimation of the costs involved requires detailed studies.

At this point it seems appropriate to turn back to the starting point and look at the original question. This was the thesis that the threshold theory becomes a keystone for all three groups of research. By estimating the threshold costs indispensable for opening new urban territory, and by calculating the threshold capacity (expressed in the number of new inhabitants), we obtain all the important data for comparing the effectiveness of various possibilities of town expansion. In other words, we are able to define the sequence in which various adjacent areas should be developed.

One should add, however, that in calculating the

⁴ See B. Malisz, "Ekonomika Kształtowania miast" [The economics of shaping towns], a work published in the series of studies of the Committee for Space Economy and Regional Science, Polish Academy of Sciences, 1963.

⁵ By long-range study we mean a physical plan prepared for a period longer than that of the long-term national economic plan (now later than 1980).

⁶ By way, of course, of urban density standards.

capacity of an area, as measured in new inhabitants, we may encounter some difficulties. This is especially the case when part of the new urban land is to be used for industrial purposes. In such an instance, it is important to break up the whole new territory into two parts: for industry and for other urban uses. This procedure proves to be possible in concrete topographical situations because we know that industry should be grouped in industrial estates and this form of location calls for specific technical conditions as far as public utility networks are concerned. But it is precisely those requirements that help us to make the differentiation.

THE ALTERNATIVE PROCEDURE

When describing the differences between conventional and new town-planning techniques in Poland, one should not forget, of course, the difference which consists in the evaluation of various alternatives of possible spatial solutions.

Till now in town-planning it was, of course, usual to consider various solutions, but a final decision was made on the basis of rather subjective views and premises which could not be verified. In the course of the present analysis the alternatives, though some may appear less satisfactory, are not eliminated *a priori*. All reasonable alternatives should be considered in the successive phases of work. The whole procedure should make it possible to return to those alternatives whenever new facts or a new approach reveal such a necessity. An analysis conceived in this manner does not aim at showing the one and only solution. It is more like a mental scaffolding which allows us to consider various possibilities according to different assumptions. This feature is very important for what we call a quasi-plan. By this notion we mean a cartographic diagram which brings all the partial results together and indicates what could be called implications of the existing state. Such a diagram has proved to be a helpful tool in the process of preparing urban plans. Each concrete development programme for a definite period, formulated by land-use needs, can be superimposed on this diagram. The scale of the spatial needs can be measured against the capacities of various areas, or spatial solutions of town expansion. The economic approach is, so to speak, inherent in the quasi-plan diagram, because it is formulated in terms of threshold costs.

THE APPLICATION OF THE ANALYSIS DESCRIBED

The author is fully conscious of the fact that this short description may prove to be insufficient and give rise to many doubts. But the main purpose was to give only an outline of the way of thinking in the modern Polish town-planning school. Nevertheless, before concluding this article it seems worthwhile to discuss the three possible applications of the above-described analysis in town-planning practice.

The first application is concerned with the development possibilities of a single town. It consists in

comparing possible alternatives of town expansion. In this procedure the analysis based on the threshold theory helps to evaluate the relative effectiveness of particular alternatives.

The economic effectiveness of various spatial solutions can be measured by the relation of costs to effects within the successive threshold lines, as it has been shown, to estimate the threshold costs. The effect, on the other hand, can be measured in new inhabitants (under given density standards). Thus the new method allows to compare the effects of different expansion alternatives, which till now was rather hard to express in quantitative terms.

It should be mentioned here that, using the same principles, it is also possible to compare concentrated (continuous) growth alternatives with the decentralized ones. In that case, it is sufficient to estimate the threshold costs indispensable for the construction of a satellite town, to calculate the capacity of its area measured in new inhabitants, and to compare the results with those obtained in continuous growth.

The second application of the analysis described takes the form of a rationalization of the town-planning process. Under our present legislation, every five years a stage plan should be prepared for each of our thousand towns, and the long-term plan revised and corrected. Even assuming that the planning of smaller towns is somewhat simplified, this is a tremendous task for the town-planning staff. In this situation it seems worthwhile to shorten the planning process by rationalizing it.

The main improvement made possible by the new method consists in the fact that the whole planning work for particular towns need not be done each time from the beginning. For all the towns, for that purpose, the three main groups of studies and the quasi-plan diagram should be available. In this way the objective implications of the existing state are registered and the logical sequence of urban land development is given. Having such guidance it is sufficient to draw up five-year and long-term programmes of development to obtain the controllable elements of the town-planning scheme. The whole graphic, descriptive and formal work of preparing the plan has to be done, of course, but the concept of the scheme is obtained within a relatively short time. And this concept is verifiable from the point of view of the economic assumptions.

Such rationalization should not be misinterpreted. It does not mean that creative thinking is to be eliminated. Quite the opposite: it leaves the planner more time for spatial composition because it facilitates his work by eliminating alternatives which are not economically sound. Thus the method in question allows proper scope both for creative thought and for economic calculation.

The third application seems to be particularly important from the viewpoint of the question raised at the beginning of this article. There is a provision for the verification of regional plans in the light of local analysis. It is obvious that such town-development analysis can provide a basis for comparison of development possi-

bilities within the boundaries of a given region. Data on threshold costs and on capacities measured in new inhabitants are totalled for the region as a whole. In this way it is possible to obtain an over-all urban land capacity within the region. Strictly speaking, the over-all capacities should be totalled for each successive threshold line. This result can be compared with the figure of urban population increase envisaged within the region in question by the regional planner. When the total capacity within the first threshold lines is much higher than the expected increase of urban population, it would seem reasonable to keep the extensions of towns within the limits of the first thresholds. In reality, however, this would never be the case. The overstepping of threshold-lines will always be necessary when a new site-bound industry has to be established (e.g., mining). But even without such a need the overstepping of threshold lines in some towns is always advisable as far as the necessary reserves of land prepared for urban development are concerned. An urbanization policy neglecting this point of view would bring all the towns within the region to their thresholds at the same time.

Consequently, when the total regional first-threshold capacity falls short of the envisaged increase of urban

population, it is easy to choose towns where the overstepping of threshold lines is most effective from the economic point of view.

Here it should be stressed that towns which are overstepping the threshold line should be developed as much as possible within a relatively short period afterward. This is understandable in view of the lower *per capita* costs, or, in other words, the period of so-called frozen investments.

Conclusions for the regional planner can be summed up in the principle that in the location of industry preference should be given to those towns which have at their disposal sufficient reserves of land prepared for urban development within the threshold limits. Those conclusions, however, should be supplemented by detailed location data for each of the towns concerned. Such data can be easily presented both graphically (on the plan) and in descriptive form. Together they constitute what the towns offer to industrial developers.

The applications discussed here cannot, of course, exhaust all cases which may occur in practice. But even this enumeration seems to indicate the importance of the proposed analysis as a tool in town-planning and urbanization policy.

SOME POLICY ISSUES REGARDING URBAN RENEWAL*

THE HOUSING COMMITTEE, ECONOMIC COMMISSION FOR EUROPE

This paper is concerned with the practices of urban renewal throughout Europe and in the United States and strives to highlight some issues facing this approach to urban problems.

SCOPE AND NATURE OF URBAN RENEWAL

Since about the middle of the nineteen-fifties the quantitative housing situation in Europe has been so much improved that it has been possible to begin to tackle qualitative housing and the problem of urban obsolescence and deterioration.

The exact dimensions of the problem in Europe and the United States are not ascertainable, but it is apparent that the problem is huge. For example, in Austria in 1956 only 10 per cent of dwellings had a bathroom and over 25 per cent were built before 1880.¹ In Czechoslovakia 35 per cent of dwellings had running water but not always in the dwelling itself.² In Belgium, the 1947 census estimated that 250,000 of the 3 million dwellings in the country were unfit for habitation, and 15,000 were estimated to become unfit each year. In the United Kingdom between 3 million and 4 million dwellings were found to lack certain amenities without which they must be considered as sub-standard, while the Ministry of Housing and Local Government found over 800,000 dwellings unfit for habitation in 1955. In Denmark in 1955, 72 per cent of the dwellings were estimated to lack at least one item of modern equipment.

The magnitude and nature of requirements vary greatly between countries, reflecting differences in social and economic conditions and the historic legacy of industrial development. In the United Kingdom and to a lesser extent in Belgium, France, the Netherlands and in the Federal Republic of Germany, to which industrialization came relatively early, there exists large obsolescent residential areas built very rapidly during the nineteenth century when building and planning standards were inadequate or non-existent. This problem is not very extensive in the Scandinavian countries, compared with the countries industrialized earlier.

On the other hand, the problem of obsolescence of dwellings may be poor residential development on the

urban fringe, such as in the United States, where development control has often been ineffective. The problem exists in countries such as Greece, Spain and Turkey, where recent industrialization has led to larger scale rural-urban migration and the construction of poor dwellings on the peripheries of towns. And it exists in countries where temporary war-time or post-war buildings are still in existence, for example in Austria, the Federal Republic of Germany and Italy.

In some European countries many centres of towns and cities were built during the Middle Ages and buildings usually do not meet modern requirements because of lack of facilities or poor layout. The historic, architectural and cultural value of many of these centres complicates the problem.

With the worst post-war housing shortage over, a number of western European countries and the United States have launched attacks since the middle nineteen-fifties upon slums and substandard residential areas. Considerable activity is also occurring in redevelopment of commercial buildings in central areas. However, there seems to be a growing opinion in many countries that a limited approach to obsolescence and deterioration is inadequate and in the long run will not solve the problem. So many factors are involved that clearance or reconstruction alone is not sufficient, and the problem must be considered in a much wider context than individual redevelopment projects. For example, physical deterioration is commonly the result of poor original construction or the lack of regulations to ensure maintenance, to control land use, to enforce density limitations and to prevent overcrowding.

Technical and functional obsolescence is also taking place much more rapidly. The rising standard of living expresses itself in a demand for better accommodation, more services and consumer goods such as private automobiles. This leads what was once standard housing to be considered substandard because of a lack of facilities (such as indoor toilets, bathrooms, heating systems, etc.) or the small size of rooms, or because of traffic problems. In non-residential areas, the changes arising from technological development, resulting in one-storey buildings, larger area requirements and lower manpower requirements per unit area of plant, also lead to functional obsolescence.

In addition many urban areas are growing very rapidly and face difficult problems of adjustment which

* Adapted from Paper No. 16b prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

¹ United Nations, Economic Commission for Europe, "The European housing situation" (E/ECE/221).

² *Ibid.*

can lead to large areas becoming obsolete. The problems are worst in the heart of the city. Rapid growth makes the existing plant and layout of the central area inadequate. This produces great problems of accommodating city centres inherited from the past to the necessities of today. It also causes great problems of readjustment, for the encroachment of commercial uses into surrounding residential areas leads to a functional obsolescence through their utilization for a function for which they were not designed. The rapid growth of cities can result in hasty and ill-considered development of suburban residential neighbourhoods. On the other hand, the root cause of obsolescence can be the economic decline or stagnation, halting normal replacement of buildings. Modernization of one part of the downtown area can also lead to deterioration of other areas.

Undesirable physical conditions, such as traffic congestion or very heavy traffic in residential areas, or the presence of noxious industries (those creating air pollution or noise), can lead to a decline in the attractiveness of an area, a reduction in land values and rent and, subsequently, poor maintenance. Deficiencies in neighbourhood facilities such as recreation areas, utilities, schools, shopping facilities and necessary services (e.g., police and fire protection, waste removal and street maintenance) can have the same effect. The consideration of in-town areas as inferior districts for raising families or for recreation, shopping and community affairs, can also have a deteriorating effect.

Government policies on rent control may be significant. If rents for non-owner-occupied dwellings are maintained at a non-economic level for a long time, landlords will not maintain or modernize them.

The increasing awareness about the multiplicity of factors which contribute to obsolescence and deterioration, and the concern to overcome other urban problems (e.g., urban expansion and traffic congestion) have produced a new concept of urban renewal as both a programme and as a process. It is conceived as a system for preventing the premature obsolescence of urban neighbourhoods and facilities; a tool for the restoration of declining areas which can and should serve a longer period of useful life; and a device for the re-creation of areas which are worn out, without leaving them and the people in them to stagnate until some accident of history in the unforeseeable future stimulates new growth. As a remedy for obsolescence, urban renewal is conceived not as a once-and-for-all effort but as a continual process, a constant remodelling of the urban fabric as parts become too old, cease to function adequately or do not meet the requirements of the modern community.

Not every country has reached this stage of thinking on the problem of the renewal of urban areas; nor is this concept always translated into housing and planning legislation. A broad concept of urban renewal is accepted in town-planning legislation and long-term planning in most eastern European countries. In western Europe, comprehensive legislation exists only in a few countries.

It is widely agreed that urban renewal consists of

three elements—redevelopment, rehabilitation and conservation—which are conceived as “parts of a combined operation with the respective activities undertaken simultaneously as may be appropriate in the various parts of the urban area”.³

Redevelopment comprises clearance of existing buildings and the re-use of the land. It is applied in areas where the layout is unsatisfactory or where buildings are generally in a seriously deteriorated condition.

Rehabilitation is applied in areas in which buildings, though in general structurally sound, are partially deteriorated, in which some loss of original function is being felt, or where conditions might lead to these. It consists of administrative measures to control the use of the land and buildings, either to restore the area to its original function, or to bring about a new use; removal of individual buildings and uses that tend to cause general deterioration; and the provision of necessary facilities and services.

Conservation, on the other hand, is a protective process applied to areas generally suited to their function and of sound quality, in which buildings are kept in good physical condition, and to areas of great historic, cultural and architectural value. It prevents deterioration by, amongst other things, requiring maintenance of buildings, preventing overcrowding, enforcing density limitations and zoning regulations.

LEGAL FOUNDATIONS

In all economically advanced countries the necessity for public intervention to undertake, facilitate or encourage the renewal of deteriorated or obsolescent urban areas has been recognized, and legislation of some sort has been enacted to facilitate this.

Generally speaking, in the eastern European countries urban renewal (conservation, rehabilitation and redevelopment) is practised within the framework of the existing legislation for town planning and the national and regional economic development plans. Special legislation on urban renewal appears unnecessary. Theoretically, some legal and financial problems in these countries may be relatively easier to resolve once a policy decision has been made. The fact that investment is decided within the framework of economic development plans facilitates the direction of resources into urban renewal. The high degree of public ownership of land should make urban renewal much simpler. And the possibility of comprehensive design should be greater.

In the United States, federal legislation for urban renewal is contained in the Housing Act of 1949. This Act recognizes urban renewal as a long-term comprehensive programme of redevelopment, rehabilitation and conservation. The Act offered federal loans and grants to local municipal renewal agencies for slum clearance accompanied by comprehensive redevelopment. Recognizing the need for a broader attack, the 1954

³ The International Federation for Housing and Planning, “Urban renewal”, Report of the International Seminar on Urban Renewal (The Hague, 1958).

Housing Act extended federal financial aid to cover rehabilitation and conservation as well as redevelopment.

There is no special legislation in the western European countries providing for urban renewal on a long-term comprehensive basis. However, considerable renewal is carried out within the framework of other legislation.

In France, special legislation has been enacted to facilitate redevelopment of urban areas where it is deemed necessary. It covers the acquisition of ground and buildings, demolition and clearance, redevelopment and rehousing and resettlement of occupants of renewal areas. A great deal of redevelopment is carried out under town-planning legislation in a number of countries, including Denmark, the Federal Republic of Germany, France, Norway, Sweden and the United Kingdom. In Sweden, since the amendment of the 1947 Building Act in 1953, local authorities may buy large areas for redevelopment. In Norway, under the 1924 Building Act, local authorities may acquire large areas for redevelopment according to an approved plan. In the United Kingdom, obsolescent or badly laid out areas can be publicly redeveloped under legislation for town planning, especially the 1947 Town and Country Planning Acts.

Large-scale comprehensive redevelopment generally necessitates unification of land ownership, if only of a temporary duration, and usually depends upon compulsory acquisition of land. Redevelopment, therefore, depends upon the ease of compulsory purchase. This varies widely.

In western European countries, compulsory purchase is very complex, frequently cumbersome and time consuming. In most countries local authorities first try to purchase land by agreement. To avoid a lengthy legal process, in some countries, such as the United States and the Federal Republic of Germany, local authorities acquire most land through voluntary agreements with the owners. In Belgium, on the other hand, legislation has made it possible for public authorities to take possession of private property approximately three months after the commencement of proceedings. France has greatly simplified compulsory purchase, while providing guarantees to permit proprietors to be associated with renewal schemes.

Normally, compensation for compulsory purchase of land is paid on the basis of the market value. In theory, assessment should not take into account increases in value that can be attributed directly to the redevelopment plan, but in practice some of the market value is probably due to the redevelopment plan. There is the risk that the community pays private land owners for increases due solely to the anticipated improvement by the community. For example, in the United States it has been suggested that the "point may now have been reached where market prices are being set with a view to acquisition in condemnation proceedings and not *vice versa*."⁴ Also, since some projects must be done in

stages because of their size and expense, the climate of improvement resulting from the completion of a first stage can greatly increase land values in adjacent areas awaiting renewal.

Sometimes this problem is dealt with through special provisions. Sweden permits local authorities to acquire areas regardless of whether a plan has been prepared or not, and this considerably reduces the risk of the assessment being influenced by the redevelopment project itself. In Denmark also, property owners have no right to compensation for structures that have been condemned if the land on which they stand is expropriated. Similarly, in the United Kingdom, when unfit houses are subject to slum clearance procedure, basic compensation is limited to the value of the land as if it were clear of buildings.

In eastern European countries there is generally a very limited right of private land in cities. Urban land in the Soviet Union and the Ukraine, for example, is nationalized and is only assigned to land users (though usually on the basis of use in perpetuity). Land acquisition, therefore, only involves a transfer. Compensation is limited to the preferential right to receive a corresponding parcel of land and to payment for losses covering the value of the buildings, unamortized expenditure and re-establishment.

ASSESSING URBAN RENEWAL REQUIREMENTS

Because of the social and political importance of housing in society today most information available to Governments on the conditions of the national building stock relates to dwellings. In general the greatest sources of information are the decennial population and housing censuses which contain considerable information about the size and type of housing unit and facilities (water, toilet, bath, etc.).

However, census material usually provides an inadequate basis for national or local urban renewal programmes. It does not normally include data on such dwelling qualities as stability, state of repair, freedom from damp, natural lighting, ventilation and many other items which are of great importance in assessing the obsolescence and deterioration of dwellings. Therefore, a number of countries have found it necessary to make special national surveys of the dwelling stock.

Appraisal methods in most countries have been developed in close association with public health authorities. The application of the powers by public health authorities in the late nineteenth and early twentieth centuries to condemn buildings as unfit for human habitation required the development of appraisal methods to ascertain the unfitness of dwellings. Consequently, many appraisal methods used today bear the hall-mark of their origin. They include such criteria as age, state of repair, stability, freedom from damp, natural lighting, ventilation, water supply, drainage and sanitary conveniences, and facilities for storage, preparation and cooking of food and for the disposal of waste water. Since responsibility for public health was usually

⁴ A. D. Sporn, "Empirical studies in the economics of slum ownership", *Land Economics* (Madison, Wisconsin), November 1960, No. 4, vol. XXXVI.

placed with the local authority, the selection of criteria is mainly by local authorities, though the central government often recommends certain general principles and standards for appraisal. For example, in Italy, criteria for the appraisal of dwellings are established by law but their application is in the hands of the municipal authorities. In the United Kingdom there is a statutory definition of the standard of fitness of dwellings laid down in the Housing Act of 1957. A few countries, on the other hand, notably Belgium, France and the Netherlands, have established national appraisal systems.

The appraisal of the quality of dwellings does not always provide sufficient information for a slum-clearance programme and is completely inadequate for a broader urban-renewal programme. Conditions leading to obsolescence must be ascertained. An efficient appraisal system therefore must include an appraisal of the quality of environment.

Where town-planning elements and environmental features are appraised, it is usually in close connexion with the appraisal of dwellings: the investigation includes criteria regarding the location and site conditions of the dwellings. Thus the appraisal method devised by the Belgian National Institute of Housing considers the situation of dwellings on a street of insufficient width, the proximity of objectionable industries, the possibility of flooding, the general condition of the block, traffic conditions, and the average density of buildings in the district.

The nearest approach to an adequate appraisal system of urban environmental deficiencies is the American Public Health Association survey technique for measuring the quality of conditions (other than housing) which affect the level of living in residential areas.⁵ The general quality of a district, judged by its defects, is measured by a system of penalty scores. Primary emphasis is put on items most directly associated with threats to health, safety and amenity, such as excessive land crowding, periodic flooding of low-lying areas, excessive noise, fire hazard, smoke or other nuisances from non-residential sources, and traffic hazards or disturbance from major thoroughfares or railroads.

These appraisal methods primarily reflect physical and technical conditions. Earlier it was seen that economic and social factors were just as important as physical factors. What matters in the lifetime of a building is its economic and social value. There are many other factors determining that value than just physical conditions. One of the most important is the value of the land (at least in the western European countries). For example, inordinate increases in traffic in residential areas or development of competing commercial centres, which cause values to fall, lead to lower profit margins and to poorer maintenance. Coincidental with this

social depreciation the value of the building plot, as distinct from that of the building, may rise because of the possibility of changing the land use to a more profitable activity, of building at a greater density and so increasing the floor area. It is therefore possible to ask whether a concept of economic life or service value may not be a necessary supplement to a physical concept.

POLICY ISSUES

Conservation and rehabilitation are usually relatively simple operations for city planning. They involve only the removal of individual structures, the repair and modernization of buildings and the correction of conditions causing deterioration. Redevelopment, however, poses more difficult city-planning questions.

Comprehensive redevelopment is considered necessary to secure a satisfactory relocation of land use to provide good standards of design, that is, day-lighting, fire precautions, lift services, car-parking, entrances, etc. which cannot be obtained by the single replacement of the existing buildings; to secure as far as possible the separation of vehicular and pedestrian traffic; and to encourage the fullest employment of modern methods of building construction which can only be obtained where large sites are available. In most European countries the technical knowledge for comprehensive redevelopment exists, but there is difficulty in attaining the broadest benefits because of legal, financial and organizational difficulties.

There is the question of how social and economic policy should be expressed in determining new land uses and building densities. It is now generally the policy of government to intensify land use to reduce urban sprawl and to secure a more efficient use of the land resources. Yet, the high value of land in the central parts of cities and the high costs of redevelopment make it efficient for the redeveloper to increase the density beyond a desirable maximum according to social, health, aesthetic and traffic considerations. Concern has been expressed in several countries that recent redevelopment, especially in central areas, has generally been too dense and too specialized. Where building is purely for the most profitable use, land prices will inevitably determine the use. Thus a common feature in the centres of many large cities is that less remunerative uses such as theatres, clubs, galleries and residences are slowly being eliminated by office and commercial uses, resulting in a uniform type of development. It is generally agreed, however, that central areas, to fulfil their purpose as the functional heart of the city and to possess vitality, must contain a variety of land uses. Residences in central areas are considered desirable because they bring life to it in the evenings; enable utilization of services of the central area during evenings and weekends; introduce other services and shops; and diversify the townscape.

It appears that the greatest difficulties in the way of finding satisfactory solutions to the questions of new land use and density in redevelopment areas, and of securing comprehensive as opposed to piece-meal

⁵ American Public Health Association, *Appraisal Method for Measuring the Quality of Housing*, part I — *Nature and Use of the Methods*, 1945, part II — *Appraisal of Dwelling Conditions*, 1946; part III — *Appraisal of Neighbourhood Environment*, (New York, 1950).

redevelopment, are not primarily technical—though there are of course many difficult questions involved—but are more concerned with the broader objectives, organization and financing of renewal.

Issues of land use, density and circulation illustrate clearly the relationship between urban renewal and the whole of urban planning. The general plan is a major tool for guiding urban renewal. Yet, while urban renewal is one of the processes for implementing the general plan, the latter must be based upon principles which permit urban renewal to be carried out on a sound economic and social basis.

Urban renewal is executed within the framework of a general plan in most countries. Planning legislation in Denmark, the Federal Republic of Germany, the Netherlands and Norway requires local authorities to make general plans in all urban areas. In countries where a plan is not obligatory for local authorities, it is often ensured by the fact that central government assistance is conditional upon the preparation of a general plan, as in the United States.

In eastern European countries urban renewal projects are drawn up in accordance with general plans, which are both a programme of physical and economic development and a timetable for execution. The plans are collateral with regional economic development plans which, in turn, are collateral with the national economic development plan.

In western European countries, since national planning usually comprises general targets rather than detailed plans and is pursued through more indirect methods, it is not always as easy to ensure that urban renewal fits within the framework of a national plan. Obsolescence is usually unevenly distributed geographically and the scale of the problem in cities in some regions is too big for complete redevelopment at present. Some regions are expanding economically less rapidly than others, and are sometimes even losing population to more prosperous parts of the country. There appears to be no effective machinery in existence for dealing with housing and planning (including urban renewal), migration and distribution of industry as interrelated problems.

Much concern in western European countries has been expressed over the lack of effective regional planning. Many urban renewal problems involving relocation can only be tackled on a regional basis. However, regional planning on a country-wide scale is still exceptional.

FINANCING AND ORGANIZATION

Methods of financing and organizing urban renewal vary from country to country and in some countries from project to project. But there is usually a clear interdependence between financing and organizing. The machinery for implementing renewal is also intimately related to the social, economic and political traditions and conditions of each country. It must meet certain basic requirements: provide an organizing authority with the necessary powers and financial resources;

ensure that urban renewal meets the requirements of the community at large, especially from social and town-planning viewpoints; and provide satisfactory rehousing of those displaced from renewal areas. In achieving this, there are two main questions: what are the relative roles of public and private enterprise; and what are the relative roles of local, regional and central government.

The demands falling upon this machinery for renewal are great, since urban renewal is costly and complicated. In the first place, redevelopment must bear extra costs of demolition and clearance. The value of land in an urban-renewal area is generally much higher than virgin land in the outskirts of a town. Then the quality of the replacement is usually better than that of the original. Considerable improvement in environmental facilities is generally involved: more open space, more or better public buildings or utilities, or an improved road layout. In addition, in most market economy countries, site values may be so high that they cause difficulty in financing certain socially desirable forms of development. Consequently urban renewal cannot be executed with a financial profit. In fact, a direct loss is usually involved.

The financing and organization are complicated because of the many various activities involved in a renewal operation. Roads and public buildings, for example, depend on public authorities and are usually financed directly through many agencies. Rehousing is both a public and private concern. Many public fields, such as roads, schools and dwellings, are the concern of both local and central levels of government.

Redevelopment. There appears to be little difference between redevelopment and normal construction in eastern European countries. The State plays the leading role. The timing, physical volume, and the size and source of financing are determined by economic development plans, which form the economic basis and a guarantee of completion for the programme. In the Soviet Union the costs of demolition and provision of services may be carried in the local budgets of the Soviets, but the rebuilding itself is almost entirely state financed.

Redevelopment is necessarily more complex in the countries with mixed economies. Most property is private, and owners have the right to redevelop their properties. Furthermore, it has been found that even where individual property owners may wish to redevelop the community must play a greater role in renewal than simply influencing the direction, and that some public expenditure is necessary. This generally occurs when (a) redevelopment requires the use of powers that are only available to public authorities, e.g., compulsory acquisition of property; (b) and redevelopment is socially desirable but is not undertaken because it is unprofitable.

Most redevelopment implies a rearrangement of property boundaries, common driveways, courtyards, garages or other common facilities. Such schemes can only be effected when the owners agree to demolish, construct or rebuild their properties. Most modern redevelopment schemes propose buildings of various

heights and that some locations be retained as open space. These measures affect individual owners in various ways. Some will benefit economically more than others, and will thus be tempted to start rebuilding. And because of differing ages of buildings, varying stages of amortization, and varying financial positions of the owners, it is exceedingly unlikely that all landowners will want to co-operate to redevelop their properties at the same moment. Thus, a planning policy relying solely upon development control to secure comprehensive redesign is inadequate.

In most countries the agencies for residential slum clearance and rehousing are public (though in a few countries slum clearance is sometimes done by private agencies), and in most cases the two tasks are carried out by the same agency. Mostly the agency directly concerned is the local government authority (commune, municipality, national committee, people's council, etc.). Central governmental and provincial and state authorities, however, have considerable influence through statutory stipulations requiring their approval of slum-clearance schemes or through financial assistance. Some Governments play a more direct role. In general, the powers and responsibilities are divided or delegated. In some countries rehousing following slum clearance is largely carried out by semi-public housing societies, as in the Scandinavian countries, Belgium, the Netherlands and France. In the United States, responsibility for urban renewal usually rests with an *ad hoc* body, a separate legal entity from the local authority. In France a local authority can entrust redevelopment to a special agency, which may be a public authority, a mixed economy society or, if certain guarantees are provided, a private society chosen by the local authority itself.

A tendency may emerge to make redevelopment the concern of an *ad hoc* commission or agency. Such an arrangement has advantages: financing arrangements can be geared to long-term operations; a qualified and experienced board is attainable; employment of experts not available to local authorities is possible; and redevelopment is possible in areas where a definite loss will be incurred. This method also has disadvantages. There is often difficulty in obtaining co-operation between the *ad hoc* commissions and the local authority in planning, public works, rehousing, etc. There is also the danger of weakening local government by reducing its functions and prestige.

The public renewal agency may normally expropriate all land in a projected redevelopment area, prepare a redevelopment plan and lease or sell its sites for rebuilding according to the plan to private developers. Although comprehensive redevelopment is assured in this approach, major problems remain to be solved. The procedure of compulsory acquisition is generally cumbersome and involves very heavy capital expenditure, although some organizational and financial measures have been taken in some places to overcome these difficulties.

France has greatly simplified the expropriation

formalities to minimize public costs. On the other hand, the affected owners and lease-holders have considerable rights and opportunities to participate in redevelopment schemes: expropriation only occurs when they do not wish to be associated with the scheme or when an amicable agreement cannot be reached between them and the renewal agency. The rights of the property owner are considerable. He has three months to consider an offer to participate in the operation. If he accepts he has the right to a credit equivalent to the assessed value of the property. This credit right can be paid off by a shareholding in new jointly owned buildings or shares in a society existing or requested by a certain number of creditors, as the creditor wishes. If circumstances permit, the creditor has the right to a parcel in the redevelopment area. Holders of commercial leases can also demand a credit when the urban renewal agency cannot offer premises. While the property owners do not manage the urban renewal organs they can play a significant role in them, even as shareholders if the organ is a private society or mixed economy society.

To meet the difficulty that the price the developer is willing to pay for land is generally considerably below the cost to the renewal authority of acquiring and preparing it, the central Governments in France and the United States make grants which subsidize redevelopment. In France, grants are made available to the renewal agency (and indirectly to the developer) to restore the price of the cleared ground to a price reasonable for the proposed use. These grants are determined individually for each project. In the United States, this subsidization policy has had a great stimulating effect upon redevelopment. Still the cities in this country are not producing feasible proposals for central government assisted renewal projects on a scale commensurate with the magnitude of the needs. Although only one-third or one-quarter of the costs must be borne by local funds and the central Government will accept as local contributions non-cash grants, such as utilities and public facilities, the most important factor limiting renewal is the shortage of funds at the local level.

Rehabilitation and conservation. Local programmes for rehabilitation and conservation, as parts of comprehensive urban renewal programmes, are only found at present in the United States. To encourage local authorities to undertake such schemes the central Government, as in redevelopment, makes funds available for specific rehabilitation and conservation projects. The Federal Government shares in the cost of public improvements necessary for the accomplishment of urban renewal objectives in residential rehabilitation and in the cost of spot acquisition and demolition of individual properties to eliminate those which are too run-down to be rehabilitated or are by nature deteriorating influences on other properties in the area.

Beyond these costs federal urban renewal funds as such are not available. A locality is largely dependent on private lenders, which has created difficulties for conservation because lending institutions have been very reluctant to invest funds in neighbourhoods of

State financial assistance available for slum clearance, redevelopment, rehabilitation and rehousing in selected western European countries and the United States

Country	Redevelopment			
	Slum clearance (i.e., dwellings only)	General redevelopment (i.e., mixed areas)	Rehabilitation	Rehousing
Belgium . . .	1. Grants to local authorities and low-cost housing societies covering any difference between cost of acquisition plus demolition costs and the value of the building land cleared 2. Grants to private owners covering 80 per cent of the difference			1. Loans to low-cost housing societies to build dwellings for families displaced by slum clearance 2. Rent subsidies
Denmark . . .	1. Grants to local authorities covering 50 per cent of "net cost" (difference between costs and resale value of land) 2. Grants to private owners of 50 per cent of "net cost" (local authorities pay other 50 per cent) 3. Loans to local authorities to pay their share of "net cost"		Subsidies, loans or guarantees for rehabilitation of dwellings	Loans or guarantees for loans for dwellings for families displaced by slum clearance
France . . .	1. Grants to local renewal agencies (local authority, public or semi-public society, low-cost housing societies or private societies) towards costs of acquisition and demolition 2. Short-term low-interest loans to meet costs of acquisition and clearance	Grants to local renewal agencies towards costs of planning, acquisition of land and demolition to permit agency to resell at below cost price	Loans or grants for the execution of major works of internal and external maintenance in dwellings	Loans to low-cost housing societies for dwellings to rehouse families displaced by redevelopment
Netherlands .	Grants to local authorities of 50 per cent of "net cost"			Rent subsidies to families from slum areas in new housing for five years
United Kingdom .	1. Subsidy to local authorities on an acreage basis annually for 60 years for land which is very costly to buy, clear or prepare 2. The expenditure of the local authority on acquisition, clearance and preparation of a site can be included in the calculations for a general grant to local authorities		Grants to home-owners covering half the cost of the provision of certain basic facilities in dwellings	1. Annual subsidy for 60 years to local authorities for each family displaced by slum clearance shown to be rehoused 2. Loans to local authorities unable to borrow on the market
United States	Grants to local renewal agencies covering 2/3 or 3/4 of "net project cost" (i.e., difference between costs of acquisition of property plus demolition and resale value)	Grants to local renewal agencies covering 2/3 or 3/4 of net project cost (i.e., acquisition, demolition, planning and legal costs, less income from sale or lease of cleared land)	1. Grants towards cost of spot clearance and demolition of properties 2. Insurance of loans for outstanding renovation and modernization by approved lending institutions against losses up to 90 per cent of their holdings	1. Development loans and annual subsidies to cover operating deficits to local housing authorities for low-rent housing 2. Insurance of mortgages on new housing in clearance areas on liberal terms 3. Insurance of mortgages on lower priced new and existing homes for families certified to have been displaced by urban renewal

doubtful quality. However, a substantial contribution to the rehabilitation of homes in urban renewal areas is made through the National Housing Act, which was in force before federal assistance to urban renewal was ever authorized, under which renovation and modernization loans by approved lending institutions are ensured against losses up to 90 per cent of their holdings.

In eastern European countries large-scale rehabilitation of existing housing stock is being deferred until the housing shortage is overcome, but administrative and financial machinery appears to exist for systematic rehabilitation and conservation schemes.

In western European countries rehabilitation and conservation are not normally the concern of local government authorities, though in Denmark an owner may be ordered to put right defects remediable at reasonable expense. But there is evidence of a general awareness of the need for rehabilitation. To this end various steps have been taken at a national level. For the most part these involve making grants and loans for the improvement and repair of dwellings and changing rent policies to facilitate this in rental dwellings.

As mentioned earlier, rent control policies during and after the war have had the effect of depressing rents below a level necessary to stimulate adequate repair and modernization. But since about 1955 or so there has been a general tendency to liberalize rent policies, often with a prime aim of making repairs and modernization possible. In Denmark, 5 per cent of the 8 per cent rent increases in 1959 and 1960 were to be set aside for internal and external maintenance. In the Federal Republic of Germany, the 1960 legislation authorizing a general rent increase of 15 per cent authorized a further rent increase of 20 per cent for better equipped and larger dwellings.

Rehousing and resettlement. In all countries there is a legal or social obligation to resettle those displaced from clearance areas. Although many countries give preferential treatment to slum-dwellers in the allocation of housing, the possibility of large-scale redevelopment depends upon a generally satisfactory supply of housing. (More and larger dwellings are often necessary in a new area than existed in the old because overcrowding is commonest in clearance areas.) This limits the possibility of renewal in practically every European country, for though it may appear that the housing situation is more or less satisfactory, in fact there are in most cases great discrepancies between housing supply and demand when measured by needs for certain population groups, as well as certain sizes and types of dwellings.

Extensive financial assistance is available for rehousing from the central Government in many countries. In Belgium, for example, the central Government makes loans to the two national low-cost housing societies on condition of their using part of these loans to construct or buy homes for the former slum occupants. In France, too, grants for rehousing (covering 100 per cent of the costs) are available to low-cost housing societies when no other possibility for rehousing exists. In Italy, the

Minister of Public Works is authorized to build at the State's expense dwellings for occupants of slum areas, which are sold or rented at minimum economic prices. In the Netherlands rehoused tenants receive subsidies for five years, to assist in paying the rents of new dwellings. In the United Kingdom, where a local authority can show that it has provided a new dwelling for rehousing a family from a slum house, the central Government pays a subsidy. In the United States, low-income families displaced from urban renewal areas have a priority to new or existing low-rent public housing constructed under the United States Housing Act of 1937. Only half the number of families eligible have been located in such housing, however. Other families must fend for themselves, though the renewal agency tries to find alternative dwellings.

Since relocation usually involves considerable expense, which many families can ill afford, grants or loans to defray these extra expenses are available in some countries: in Belgium and the United States from the central Government, and in some cities in the Netherlands and United Kingdom from local authorities.

The resettlement of private commercial and industrial enterprises presents almost as many problems as the rehousing of families. For just as urban renewal areas contain many families which cannot afford the rents of new dwellings, so they also contain enterprises which cannot bear the costs of new buildings. With renewal these enterprises either go out of business or resettle in another deteriorated area, both of which are generally undesirable. For the most part this is a problem that has received little attention. In several countries displaced businesses receive relocation grants or eviction indemnities, but these are generally small and do not solve the real problem, which is the marginal profitability of these businesses. In France, however, an attempt has been made to assist such enterprises by offering special loans to enable them to establish themselves on a sound economic footing in a new area.

IMPLEMENTATION PROCEDURES

The implementation of an urban renewal operation can be broadly divided into three stages: survey, the preparation and approval of the plan and, finally, the actual renewal operation.

Survey stage. The location and delimitation of urban renewal areas are determined from the recommendations of the urban general plan, the results of an appraisal of the quality of buildings and environment, and a rough estimate of the likely costs of renewal. These also permit a list of priorities to be drawn up and the order of successive renewal projects to be established. This is followed in most cases by an investigation of the social and economic structure of the project area, a step of utmost importance. The social surveys cover such items as number of inhabitants and households, composition of household, age, occupation and employment, income, rent, rehousing desires and quality of occupancy. The

economic survey covers the number of enterprises, types, number of employees of each enterprise, nature of clientele or customers, profit margins, resettlement requirements, etc.

The methods of collecting this information are numerous and varied. There has been little attempt to standardize the survey systems in Belgium, where the National Housing Institute has a survey method for national use. The cost of survey and appraisal is often considerable, since they involve a large and well trained staff.

Therefore in a few countries the central Government assists local authorities with the costs of this preliminary work. Thus, in redevelopment projects in France and all types of renewal in the United States, these charges may be included amongst the expenses of a renewal project upon which the central Government subsidy is based. In the United States grants are also made to smaller cities and towns for general planning.

Establishment of renewal plan. The project renewal plan has three components: a site plan of the physical development; a financial scheme, covering all of the operation at its various stages; and a time schedule for the complete operation. In western European countries the renewal plan is drawn up by local authorities and renewal agencies in conjunction with private property owners, developers and builders. In the eastern European countries, it is drawn up by regional economic committees, and, notably in the Soviet Union, by a central Government design office.

In some countries there are uniform procedures for drawing up and implementing renewal plans. In others, they vary from region to region, especially in countries with federal forms of government. In most countries proposals of local authorities for extensive redevelopment are reviewed and/or approved by a higher authority. The main reasons for review of proposals before a higher authority are to prevent unnecessary harm to private interests, to judge the efficiency of the projects or, when financial assistance is involved, to keep the commitment of the Government within bounds.

In the United States there is another device for supervision by central Government. Urban renewal is a continuous programme involving many bodies and diverse activities. Hence, the Federal Government requires a concerted Programme for Community Improvement, or Workable Programme. Its preparation and annual approval of progress are required for federal financial aid. This programme includes local official action and official commitments to take action to realize specific objectives of an effective over-all urban renewal programme. Such objectives include (a) a comprehensive community plan; (b) improvement or adoption and enforcement of local codes and ordinances governing the construction, use and occupancy of buildings; (c) identification and analysis of blighted areas; (d) administrative machinery for co-ordinating programme activities and adequate funds to support such activities; (e) a plan, organization and resources to meet the re-location

needs of families displaced by governmental action; and (f) effective action by a local committee with community-wide representation to encourage citizen participation in the local renewal programme. It recognizes that a piecemeal approach to community improvement will not work.

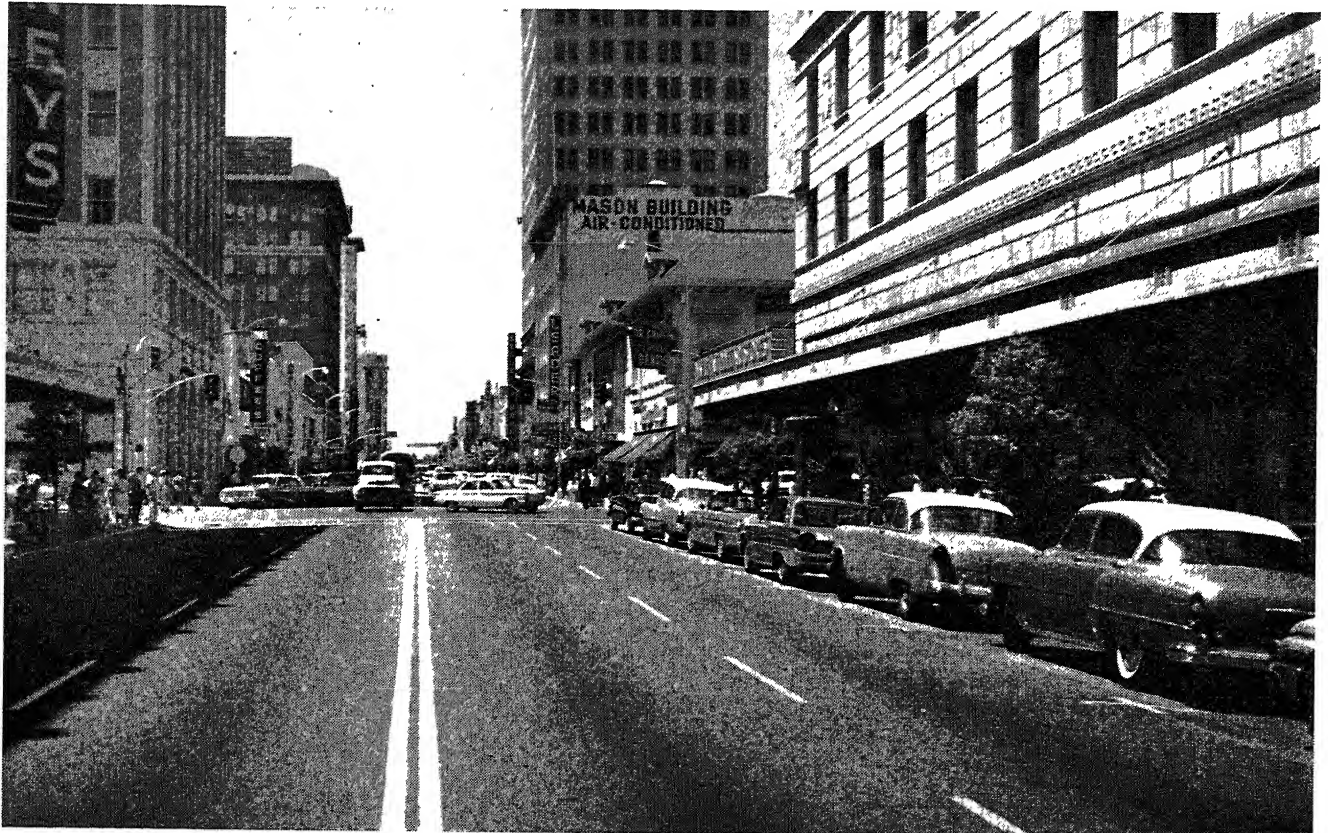
Conduct of operations. It is exceedingly difficult to generalize about practices in implementing renewal plans. There are certain common problems, however, and certain general practices and attitudes of the public authority which are important.

Perhaps the most important of these concern the relationship between the public authority and the occupants of the urban renewal area. Urban renewal poses difficult social and economic problems and it is important that the public authorities recognize these. The opinion in nearly all countries is that it is vital to success and to undertaking later renewal operations that a close rapport be developed between the individuals affected by renewal and the staff of the renewal authority. The latter must be friendly advisers and helpers, listening patiently to the problems of families and offering encouragement and advice on many matters.⁶ This obviously involves the use of a large well-trained and skilled staff, including social workers, lawyers, economists and building experts.

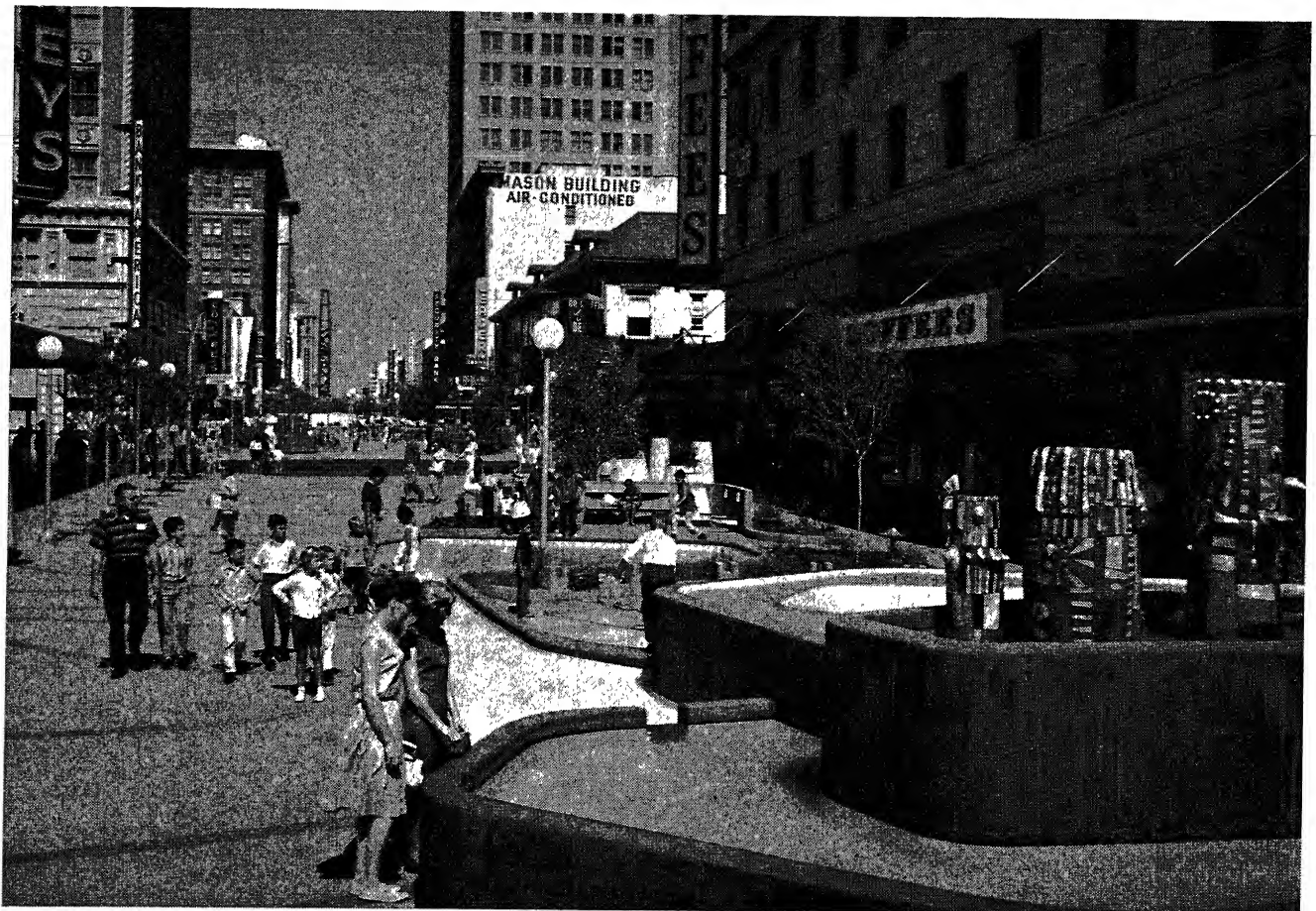
Citizen participation. The extent and nature of citizen participation vary widely. In nearly all countries there is a growing realization that the success of renewal depends significantly on an understanding by the people of the purpose and suitability of renewal. There is a growing awareness that the preparation of urban renewal schemes should not be limited to the legal and technical documents but should extend to other things such as films and exhibitions, through which local support can be obtained. This is best practised in the eastern European countries and the United States. In the former, trade union and party organizations actively engage in promoting public debate, criticism and understanding of renewal schemes and whole town development programmes. In the United States many "citizens' urban renewal committees" and neighbourhood groups are organized to promote citizen understanding and support of urban renewal.

The participation in the United States is not limited to being kept informed and making comment and objection. The idea of renewing American cities has captured the imagination of an increasing number of business, civic and other private groups. Private corporations and foundations have been formed in a number of cities, specifically to promote effective use of federal aids to urban renewal. Others have undertaken the renewal of urban areas in or near central business districts without the use of federal financial assistance. In every major city there is a Downtown Association, often with its own paid staff, which co-operates with local agencies and often initiates renewal projects. Neighbourhood organ-

⁶ United States, Housing and Home Finance Agency, Urban Renewal Administration "Urban renewal notes", November-December 1960, Washington, D.C.



Credit: Victor Gruen Associates and Tidyman Studios



Credit: Victor Gruen Associates and Tidyman Studios

izations in residential districts also initiate and support schemes, which is particularly important for rehabilitation programmes. Many national, private, professional, business, real-estate, financial, home-building, labour, educational, religious and welfare organizations give support to urban renewal. Some provide assistance to communities in initiating and moving forward with their local renewal projects. A private organization, Urban America, Inc., formerly the American Council to Improve our Neighbourhoods, conducts research and stimulates public interest in urban renewal. One of the largest chain-store and mail-order corporations in the

United States has an Urban Renewal Division which stimulates constructive citizen support for local urban-renewal programmes.

In western Europe the initiative for public renewal rarely comes from private individuals or societies, and direct participation of citizens is not usual. It may, however, be in embryo in the United Kingdom, where a Society for the Promotion of Urban Renewal (SPUR), has been established, and the Civic Trust, which has 300 local bodies, began by 1961 to take an interest in urban renewal.

Fresno, California, redevelopment

(Top left) Fulton Street, Fresno. Before redevelopment, this typical main shopping street in the city's core was congested and inconvenient—and in danger of losing its business to major outlying shopping centres

(Lower left) Fulton Way, Fresno. After redevelopment, the six-block pedestrian mall enjoys a delightful variety of sculpture, fountains and rest stops. Also included in the project were street realignments to divert traffic and additional parking facilities on the periphery of the core. Fulton Way is but the first stage of a longer-term renewal plan

Part four

REVIEWS OF METROPOLITAN PLANNING

THE REGIONAL PLAN FOR THE STOCKHOLM AREA*

C. F. AHLBERG

The regional plan for the Stockholm area is a product of Swedish municipal democracy. Astonishingly, it was unanimously accepted in December 1958 by the federation council of eighty elected representatives of the forty-six municipalities in the regional planning federation—from Stockholm the capital with its population of 800,000, to the fishing community of Blidö with only some 1,000 persons.

It had begun six years earlier with discussions between the leading politicians and civil servants in each of the municipalities and the officers of the federation who at the same time made inventories and carried out expert investigations. A draft regional plan was drawn up which, after thorough study by the regional planning committee (set up by the council), was transmitted to all municipalities, state authorities and other bodies concerned, for their consideration. Compromises and revision followed and the proposal was again presented, made public and thoroughly examined and amended.

As a result of this long procedure, and with collaboration between the representatives of lay groups and experts, a plan was evolved that met, on the one hand, the need for a uniform and balanced framework for the development of the region and, on the other hand, the individual claims of the municipalities. There was certainly some measure of suspicion and jealousy at earlier stages and some apparently insuperable conflicts of interest. But the final plan was adopted unanimously.

It is true that there was much in the plan that the experts would have preferred otherwise. The compromises left their marks; but it was the compromises that made it a realistic plan. The procedure had of course taken much time; but during these years of investigation and deliberation the plan and its purpose had grown in the minds of the municipal representatives. And this is a point of the greatest importance, for communal autonomy is strong in Sweden, and it is on the individual municipalities that the realization of the regional plan depends. The regional planning federation has no authority: its only function being to draw up and subsequently to revise and renew the regional plan.

THE REGION TODAY

The district concerned in the regional plan of the Stockholm area consists of the City of Stockholm and

forty-five municipalities of the County of Stockholm. The distance between the most southerly and the most northerly point is 160 kilometres (100 miles). East to west the greatest distance is over 110 kilometres (seventy miles). The total land area is about 527,000 hectares (2,034 square miles). The population at the end of 1959 was about 1,220,000, or nearly one sixth that of the whole country.

The most characteristic feature of the landscape of the Stockholm area is the variation of land and water. In the east and south are broken areas of the coast and archipelago. Fairly large continuous land areas form the hinterland of the northern part of the region. Bedrock is exposed over large areas. Variations in elevation are small.

While the built-up area of Greater Stockholm pushes out in ribbons some twenty-five kilometres (sixteen miles) from the centre, and in the northwest oversteps the area covered by the regional plan, tongues of largely untouched land extend between these bands far into the inner parts of the city. They consist of rural areas with, especially in the south, large tracts of forests, intensively exploited as recreational areas by the urban residents.

Both in these largely recreational areas and elsewhere in the region, there are built-up areas whose economy is not so dependent on the capital. As the built-up area extends and new districts are drawn in to the common labour market the boundaries of the metropolitan area are pushed outward. The area which for statistical purposes is regarded as Greater Stockholm consists of twenty-seven municipalities in addition to the City of Stockholm.

So defined, Greater Stockholm covered an area of 238,000 hectares and at the end of 1959 had a population of 1,133,000 inhabitants. In 1959 the population of Greater Stockholm was housed in about 424,000 dwellings containing about 1,300,000 statistical room units (rooms and kitchen). The average number of residents per 100 room units was thus eighty-seven, but this figure ranged from about 70 to 130. Eighteen per cent of the dwellings were in private houses and 82 per cent in flats.

The recreational settlements in the area of the regional plan contained some 50,000 houses. More than one half lie in contact with salt water. The summer population in the most intensively exploited districts is about ten times as great as the fixed populations.

Places of work are concentrated to a still greater degree near the centre. Over one-half of the population

* Paper No. 21 submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.



(Left) Stockholm City Centre shopping mall

Office buildings are close by, but distinctly separate, and served by their own level of pedestrian movement

(Below) Suburban development of Hagsätra

Apartment buildings are usually within 500 yards and single-family homes within 900 yards of a shopping centre and subway station

Credit: Swedish Information Service



Credit: Swedish Information Service



Credit: Swedish Information Service

(Above) Farsta Centre, Stockholm

The train station, shopping centre and multiple dwellings are grouped for greatest mutual advantage

(Right) Summer home near Stockholm

"The most characteristic feature of the landscape of the Stockholm area is the variation of land and water" of the archipelago. "The plan . . . exploits the unique features that the Stockholm landscape offers"



Credit: Swedish Information Service

of Greater Stockholm are employed; which is comparatively more than in the country as a whole. Of the working population, about 70 per cent; have their jobs in Inner Stockholm, and about one-third of these within about one square kilometre, Nedre Norrmalm. This high concentration is due to the composition of the economy and the fact that Stockholm is the capital city.

Commuting between the heart of Greater Stockholm and the outlying districts is, as in all metropolitan areas, a serious problem. Three quarters of the commuting traffic to and from the central Stockholm is accounted for by public transport, and the underground system is the most important. The suburban municipalities are served to an equal extent by the bus lines and railways. Private cars account for the other 25 per cent of the commuter traffic, and this stretches the arterial road system to the limit, for it is not fully adapted to meet present-day requirements. The streets of the City centres are congested, and parking space is greatly restricted.

FORECASTS AND PROGRAMME

The regional plan has been designed for conditions expected in 1990. It thus looks further ahead than is customary for Swedish planning. In a plan for a metropolitan region one must reckon with very extensive projects requiring many years to accomplish, such as water conservation and highway engineering. It is only reasonable that projects should be designed for the prospective conditions more than twenty years ahead. Thirty-five to forty years was therefore considered a suitable period for the regional plan of the Stockholm area. Such long-range planning should, of course, be restricted to the broader lines.

The developments of the region during the period covered by the plan will be determined to a large extent by the general development in the country as a whole. Therefore the following assumptions were made:

- (1) The gross national product has grown rapidly, and this rate will be maintained;
- (2) The population of the country is expected to increase steadily but very slowly;
- (3) The rationalization of agriculture will continue, with resulting reduction in the labour force and continued urbanization. The service sectors in the economy will expand to a marked degree with the rising level of prosperity. The current tendency for the population to concentrate in the most densely-populated parts in the south and west and around Lake Mälaren can also be expected to continue;
- (4) The volume of motor traffic, which is rapidly increasing and is now approximately at the stage it had reached in the United States thirty-five years ago, is expected to increase to about one motor vehicle per three inhabitants in 1975.

The regional plan will allocate land for different purposes and a network of communications. To estimate the amount of land to be reserved for residential purposes a forecast of population, and of standards and form of

housing must be made, account being taken of summer residences.

For a long time now the population of Greater Stockholm has grown roughly in step with the expansion of urban economy of the nation, in more recent years at an average rate of 15,000 persons annually. This annual increment will gradually decrease. The population is expected to increase from the present 1.13 million to about 1.45 million, and the whole region to 1.5 million.

The average number of residents per 100 room units, at present eighty-seven, about 160 at the turn of the century, has fallen steadily except during the two world wars. Less than one half of the housing of about 10,000 dwellings, annually produced in Greater Stockholm between 1953 and 1958 was accounted for by the increase in population. The rest may be regarded as going to increase the standard of living. This increase can be expected to continue; it is estimated that in 1990 there will be an average of seventy residents per 100 room units.

In the Greater Stockholm area the housing production has been concentrated on flats since the war, and the fraction of one-family houses is on the decline. There seems to have been a falling off in the acquisition of summer cottages; this might be ascribed to the simultaneous increase of motor cars, for there has been a tendency to put the car first. In the long run it is likely, that the increase in motoring, linked with the general increase in prosperity, will promote an increase in the number of summer places as well. The number of one- and two-family houses, now less than 20 per cent, will increase to 30 per cent by 1990. The increase in summer cottages will be to a considerable extent beyond the boundaries of the planning region.

Changes in the age structure of the population associated with certain consequences of the increased prosperity, will probably bring a further fall in the number of wage-earners to 45 per cent of the population, from 56 per cent in 1940 and 50 per cent in 1961. At the present rate of development the national product will double in twenty years and production *per capita* may conservatively be expected to at least double within the plan period. Part of the increase in production will go to improvements in quality, thus the volume of goods handled in the retail trade will not be more than doubled, in spite of the increase in population. The sales area per unit quantity of goods will probably remain relatively unchanged, and the total land requirements for retail trade will be about twice that of the present.

Automation will increase the land requirements of industry and wholesale trade. While the number of employees in certain large industrial areas studied in outer Stockholm will remain at about 200 per hectare (80 per acre) it is expected that for new industrial districts the figure will be one half this in the central areas and one quarter in the peripheral areas. Increased land requirements has led to a considerable interest in placing more industry in the outlying areas.

Offices, it would appear, will still be concentrated at the centre. Greater Stockholm will remain the chief

working area for about one half of all employees residing in the suburbs. But with the rapid increase in the population and retail trade in the outer areas, there is an evident tendency for this to be concentrated in fairly large shopping centres. And with increased motoring this development will likely continue.

Although the number of motor vehicles has risen considerably in recent years, which has greatly increased commuting traffic, the public system still accounts for the greater part of the transport. The greatest change here has been the transference of considerable parts of the system to the underground and suburban railway. There has been a reduction in the suburban bus traffic as there has been on the railways. A continued increase in the number of motor vehicles is expected, but at rush hours the public transport will remain indispensable.

PURPOSE AND ESSENCE OF THE PLAN

The purpose of the regional plan, as defined in the Swedish Building Legislation, is to co-ordinate the planning of the various municipalities. But in accordance with the strong autonomy of Swedish municipalities, it will not deal with problems that can be solved by the municipalities themselves.

Consequently, the regional plan for the Stockholm area will involve different degrees of detail for the different districts. For the outer parts it is highly schematic. The urban areas are indicated with no internal differentiation. A particular municipality's approach to this is of no major interest to the neighbouring ones, and it is thus a purely municipal planning problem. On the other hand, within Greater Stockholm where built-up areas extend through several municipalities, the distribution of working and residential areas of different types within the individual municipalities must be determined by its suitability for the whole. That is, there must be inter-municipal organization. For the built-up areas of Greater Stockholm, the regional plan is therefore far more detailed.

The essentials of the regional plan are the following: the central part of the region—Greater Stockholm area—comprises the built-up areas, disposed in radial ribbons along the main arteries of communication converging on the centre of the city. Continuous green areas surround the built-up areas and separate the ribbons; they are intended for agricultural and recreational purpose. The parts west of the built-up area of Greater Stockholm towards Lake Mälaren contain several areas for summer cottages, but otherwise they are mainly rural. An inner coastal and island belt in the east of the region is dominated by areas for summer habitations. The whole of the outer band of islands is a continuous natural reserve. It is intended that within the areas of summer habitation, subsequent detailed plans should leave considerable areas for agriculture and recreation, since these residential areas have their *raison d'être* in close contact with open land and a certain rural character.

The regional plan contains two major civil airfields, Bromma which lies only nine km. (five and a half miles)

from the city centre, and Arlanda, which lies forty km. (twenty-five miles) from the city centre. Since the noise disturbance around Bromma has long been serious, all jet traffic will be moved to the new air-field. Its position has been chosen not least because of the noise conditions. All other urban development must now be avoided within a wide area around the airfield.

LEGAL MEANS

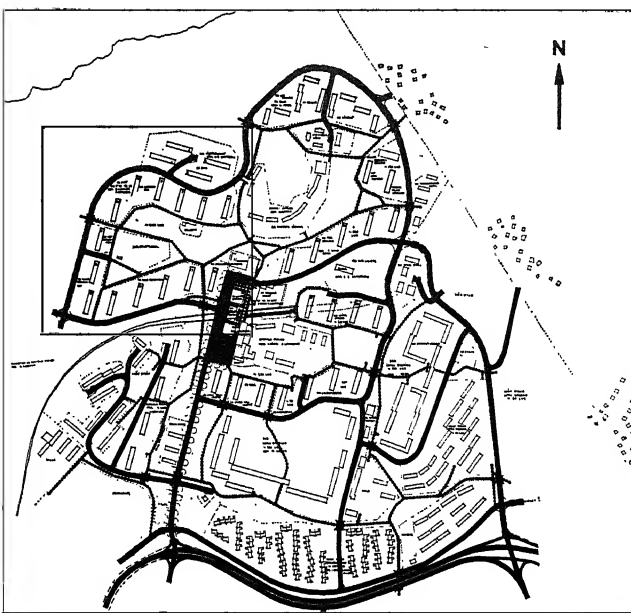
The means by which development is to be guided lie largely in the hands of the municipalities. And what is known as the municipal "town planning monopoly" has a very special significance. Since 1939 no land owner in Sweden has an *a priori* right to exploit his land for high-density building. His right is restricted to low-density building of a rural character which may not demand public water supply, sewerage, roads and suchlike. The right to use the land for urban development is given by the municipality after adoption of a town plan. This must be tested and approved by a national authority before it can be proceeded with, but does not prejudice the primary right of the municipality to thus determine the right of exploitation in both extent and time. Liability for compensation to a landowner is limited to the case where the plan deprives him of his right to low-density buildings. There is the regulation that agricultural land shall not be acquired without special permission for any other purpose than agriculture, or by anybody who has not the qualifications to pursue agriculture.

Another legal principle of the greatest importance to physical planning in Sweden—and especially for a plan such as the regional area—is the ancient "all men's right" which prescribes, among other things, that so long as no damage is caused to trees or crops anyone has the freedom to go on privately owned land that is not directly connected with a dwelling. All the water of our archipelago is also free for passage. This means that the forest areas and uninhabited shores in the neighbourhood of our towns can be used for recreational purposes without special measures and that all forms of boating can thrive.

Finally, the municipalities have fairly wide powers to expropriate land for urban development. The progress made in the execution of a plan is to a large degree dependent on the policy of land acquisition that the municipalities pursue. The excellent legislative apparatus possessed by the local authorities is used in widely different ways by the different municipalities, depending on the political opinions and the ability of the persons or body concerned.

GREATER STOCKHOLM IN THE REGIONAL PLAN

There will be no extensive modification of the present main railway system. In addition to the present underground and suburban system two new lines through the centre are envisaged. Most of the suburban areas will then be served by the underground either directly or by feeder bus routes. The plan provides for a number of new



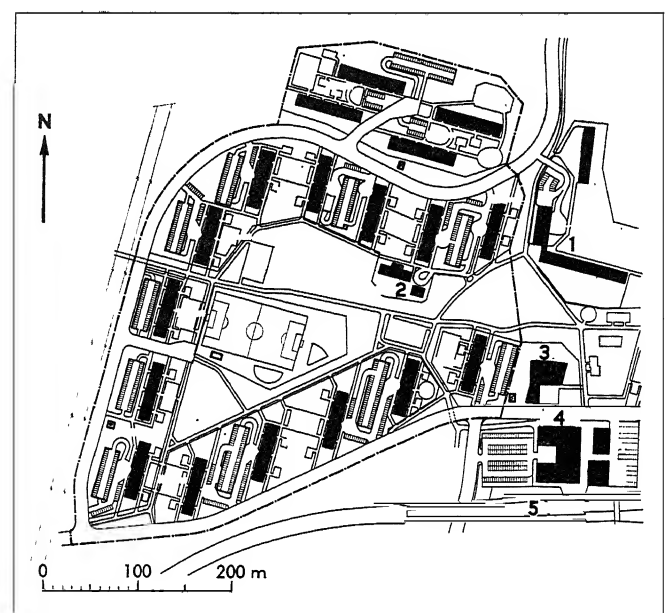
Credit: Planning Commission of the City of Stockholm

Bredäng, Stockholm

Swedish residential planning articulates pedestrian, motor vehicle and subway modes of transportation

Vällingby Centre

The traditional conflict between intensive transportation systems and intensive land uses is eliminated by building the centre over the station of the commuter railroad, thus enhancing the benefits of both



Credit: Planning Commission of the City of Stockholm

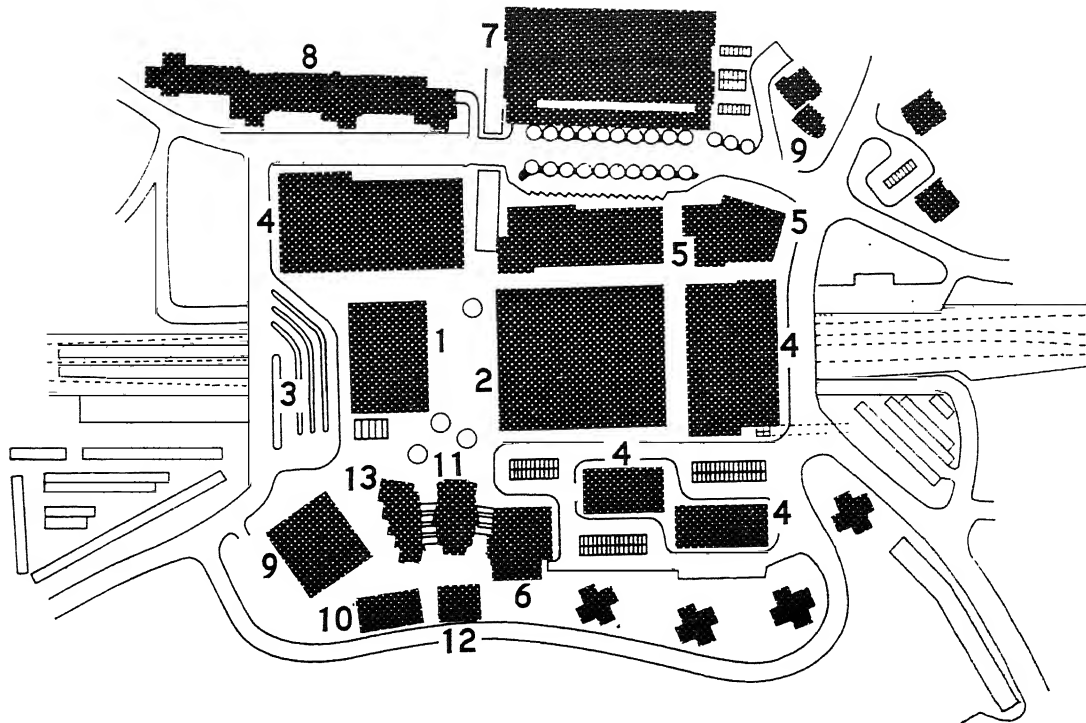
A Bredäng neighbourhood

This unit has a common open centre with recreation facilities and nursery, and shares its school, church and shopping facilities with adjacent neighbourhoods

KEY: 1: school; 2: day nursery; 3: church; 4: centre; 5: subway station



Credit: Swedish Travel Service



Credit: Stockholm Chamber of Commerce

Vällingby Centre Plan

KEY: 1: train station; 2: commercial building; 3: bus stop and taxi stands; 4: commercial buildings; 5: two stores; 6: hotel; 7: parking garage (600 capacity); 8: apartment building; 9: churches; 10: library; 11: cinema; 12: youth centre; 13: assembly hall

roads into the centre of Stockholm, each connected with a circular road. Through the central area there will pass a north-south and an east-west artery of the same type.

The central city area will be still the main business area, and commuting traffic will be very extensive. If public transport is to be competitive with the private car, it must be independent of the overloaded road system. Either special roads or lanes must be built for buses, or railways with stations in the heart of the city must be relied on. The latter is the more suitable alternative. A main principle of the plan has been to provide existing built-up areas, now served by buses, with new underground railway lines, and to group the required additional housing within reach of the new and existing stations up to their capacity. Thus, an attempt has been made to obtain a balance between the size of the built-up areas and the transport system. Some supplemented bus service between certain suburbs and the centre has, however, proved necessary.

The network of roads to and within the city centre will be expanded to carry without undue congestion the volume of traffic likely to occur at all times except at the morning and evening peaks. Only in this way can the necessary traffic pass fairly freely. Such a system would, carry about 25 per cent of the commuters at rush hours, while public transport will be designed to take the other

75 per cent. There must therefore also be a reasonable balance between the size of the built-up areas and the capacity of the arterial roads in certain sectors.

In locating industry in new districts two main guiding principles are followed. One is to provide industry itself with good facilities through proximity to main roads and the railway, and to some extent also to the quayside, and to offer large flat sites with good building ground.

The other principle is to distribute industry among different suburban sectors roughly in proportion to the residential population. If a dormitory-town environment is to be avoided and the advantages of the common labour market are to be enjoyed it is necessary, as called for in the Regional Plan, to spread industry and other decentralizable activities fairly uniformly throughout the outlying districts and yet to contain these districts within a reasonable distance of influence around the city centre.

The greatly increased consumer market in the outer areas, combined with the increased individual purchasing power, means that the shopping centres in the outer areas will provide a wide range of goods. With the increased use of the motor car the potential area of influence of a shopping centre is growing, and the regional plan provides for several fairly large shopping and cultural centres with areas of influence of 50,000 to 150,000 inhabitants. The centres will also lie on railway or underground lines.

At a later stage when the number of private cars has increased and the motor-way network has been improved there might conceivably be two very large shopping centres relying entirely on motor cars, one for the northern and one for the southern suburban areas.

Beyond the inner metropolitan area blocks of flats are largely concentrated around stations on the respective railway or underground routes. The industrial areas are mostly placed near residential districts of this type. In the more extensive built-up areas, shopping centres are located which serve wider suburban districts. In this way, well defined nuclei are formed in the suburbs.

This structure, with neighbourhoods clustered around such urban nuclei, and these in turn encircled about the heart of the city, constitutes an attempt to endow the metropolis with a form based on observed trends in structure; but it implies that they follow a more definite line.

Similarly, the plan attempts, where compatible with practical and economic demands, to bring the built-up areas and traffic routes into contact with the water. The plan thereby adheres to the specific Stockholm tradition of urban structure, and exploits the unique features that the Stockholm landscape offers.

ROLLING PLAN

The municipalities of Greater Stockholm will, of course, still be growing after 1990. In fact, by then several new built-up areas will have been widened. Thus the conditions in 1990 as the plan now depicts them will serve as a guide for extension only in the immediate future. It is intended that there shall always be a plan for thirty to thirty-five years ahead. The boundary of this period will be constantly moved forwards ahead of current development. This is what we call rolling plan.

METROPOLITAN PLANNING PROBLEMS IN THE NETHERLANDS*

G. A. WISSINK

The Netherlands is one of the most urbanized countries in the world. Nevertheless it has no very large cities. Amsterdam, the largest centre, has not yet passed the million mark for its total urbanized area. Although Rotterdam and The Hague follow at close distance, the rest of the urban population lives in only medium or small urban agglomerations.

At first sight it may seem that many baffling problems which tantalize metropolitan planners today have bypassed this quiet country, or manifested themselves only to a small degree.

To an extent this impression will hold out on closer observation. But at the same time it will appear that, on account of a quite unique grouping of cities and urban areas, the Dutch example opens interesting avenues for thought on shaping large metropolitan areas all over the world.

In the Netherlands there is a metropolitan-sized population contained within an area no larger than that of a good-sized metropolitan area elsewhere. This population—4.2 million—lives in a number of physically separate and rather autonomous centres which form a horseshoe-like pattern around an essentially open central area having a diameter of about thirty miles. This arrangement is indicated by the term “Randstad Holland”.

Measured along the horseshoe, the structure stretches over nearly 100 linear miles. The width of the ribbon is about five to seven miles, though it is not continuously urbanized. Preponderantly open areas of two to twelve mile separate the major urban centres on the ring. At the open end of the horseshoe the distance between Rotterdam and Utrecht is twenty-five miles. No centre is farther than about forty miles from any other centre. The open inner area measures 615 square miles and has a population density of 885 persons per square mile. The total area of the Randstad *plus* the open centre amounts to 1,270 square miles, containing 4.75 million people in 1961 (of which 4.2 million in the Randstad itself).

For comparison, the “Greater London Conurbation” of the 1951 census measured 720 square miles and counted 8.35 million persons. But the Greater London Planning Region covers 2,700 square miles. And some persons have claimed that the London Region includes over 4,600 square miles and a population of 12.3 million.

WHAT IS A METROPOLITAN AREA ?

The question now arises whether the Randstad can be considered a metropolitan area. Therefore the term should be defined.

For the purposes of this paper it indicates an urban complex of considerable size, of which the different parts are integrated on a basic level: they are tied together by a close-knit network of daily relations and together form a functional whole, very much like the city formerly functioned as a whole.

Unlike cities of former eras, however, the present-day metropolitan areas need not be solidly built-up. Contiguous urban bodies of brick and mortar surely continue to exist, but they do not necessarily coincide with the total functionally integrated entity. Considerable stretches of countryside may separate dormitory towns from the main urban body. The metropolitan area may even contain more than one major urban centre.

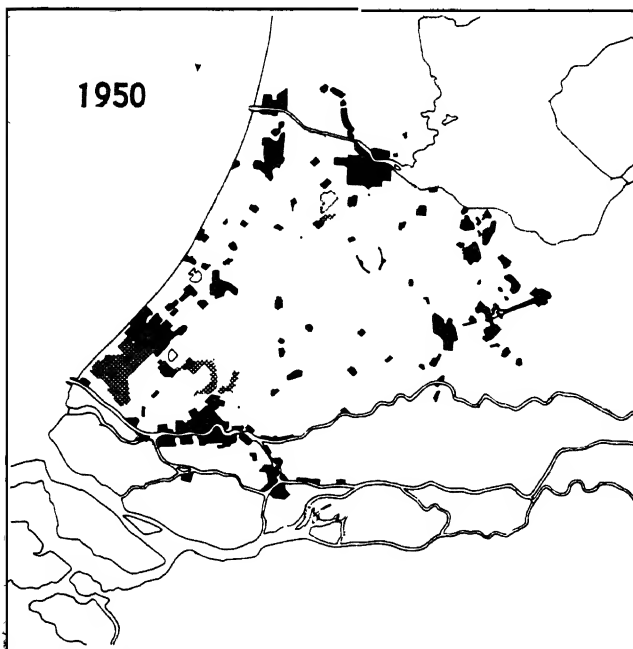
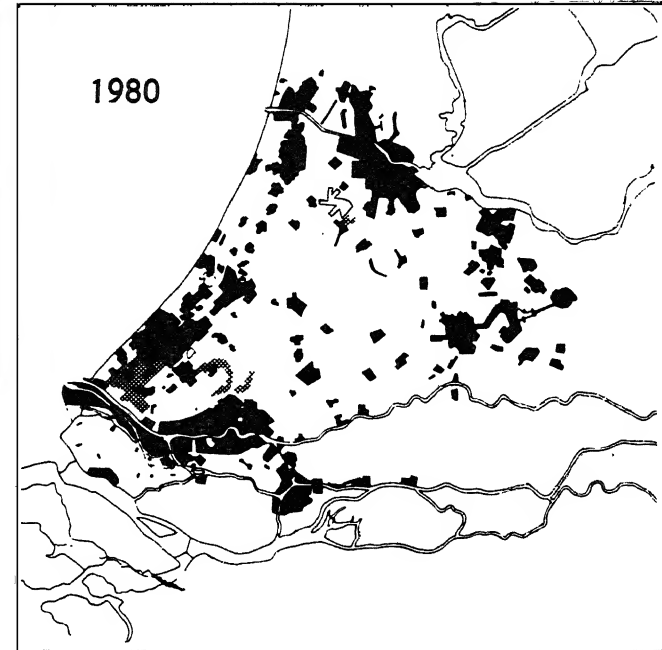
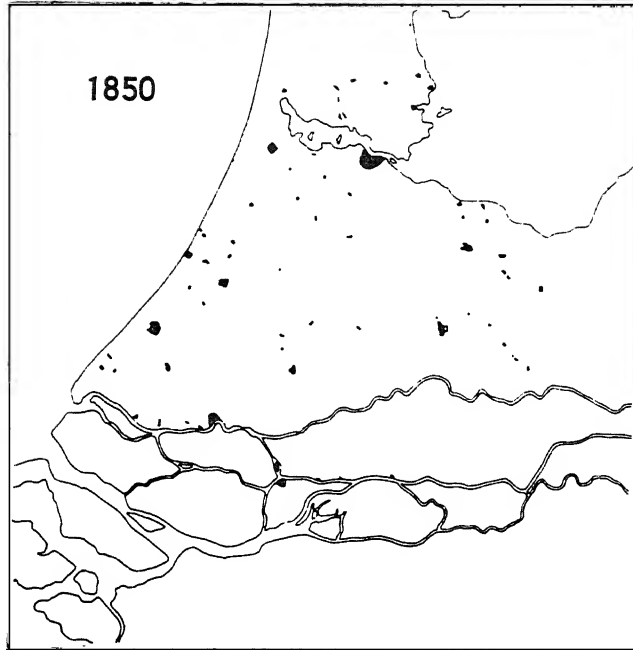
The essential quality of the metropolitan area is that a large number of heterogeneous parts are closely interdependent and interconnected. The improvement of transportation and communication has thereby done away with the necessity of their close physical unity. The several parts depend on good mutual accessibility. Otherwise the primary advantage of very diverse and often highly specialized functions of the metropolis will be lost. Although necessary travel should be cut to a minimum, worthwhile travel should be given maximum opportunity.

THE RANDSTAD ONE METROPOLITAN AREA ?

Virtually all Randstad cities have their roots in a distant past. Several originated as port cities, others were dominantly market centres and still others sprang from the will of a prince. They grew almost completely independently of each other. They each had a character of their own and were relatively small.

Today the different cities have grown to a considerable size. There is a very sizable amount of cross-commutation. Furthermore the percentage of commuters is constantly increasing. Nevertheless each individual city possesses a large degree of autonomy and every one of the historic cities has an atmosphere quite its own. Although functionally specialized to a degree, virtually all cities are differentiated enough to offer very diverse employment opportunities. Shops, service institutions and cultural and recreational facilities are well represented.

* Paper No. 24 submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.



KEY: 1: built-up areas; 2: horticulural areas; 3: airport

Randstad, Holland

Growth of the Randstad from 1850 to 1950, and projected to 1980

all parts. Actually, travel between any two parts of the Randstad need not require more than an hour or thereabouts. To an increasing degree, specialized functions located in one particular city serve the whole Randstad.

Thus planning for the Randstad should aim at preserving a decentralized structure. It should have as its *Leitbild* (image) the modern decentralized metropolis in which there is a minimum need, but also a maximum opportunity, of commuting and in which highly specialized functions are easily accessible from all parts.

PLANNING FOR THE RANDSTAD

Planning for the Randstad, like planning for other parts of the country, is adjusted to the organization of central and lower government. The national territory is divided into eleven provinces and about one thousand municipalities. Responsibility is largely decentralized. Lower authorities not only execute the orders of higher authorities, but also have important powers of their own.

The organization of public authorities led to three types of plan: municipal plans, regional plans and the national plan (in practice the latter has evolved into a national planning policy). The Housing Act prescribes that municipalities with a certain minimum number of inhabitants (10,000) should have an extension plan. Actually every municipality has one. It provides a rather detailed description of use categories to be allowed and it designates limited areas for development. The local plan must be approved by the provincial authority.

Regional plans are made by the provincial authorities. They provide indications for the elaboration of municipal plan and must be approved by the central Government.

There is however, little doubt that three or four subdivisions—together embracing nearly the whole of the Randstad—can be distinguished, which internally have already attained such a high degree of interrelation that they can appropriately be termed metropolitan areas. If the measure of a high degree of basic functional integration is applied, the present-day Randstad certainly is not one metropolitan area.

Yet the remarkable thing is that modern metropolitan planning often precisely aims at a structure which already exists in the Randstad. Modern planning often thinks in terms of an open, multi-nucleated structure, consisting of a number of major parts which are functionally more or less complete, while nevertheless specialized functions serving the whole of the area are easily accessible from

The planning programme for the Randstad embraces four major points.

(1) Restriction of its growth by means of stimulating the growth of those parts of the country which are situated outside the western (Randstad) provinces;

(2) Preservation of a clear distinction between urban and rural areas. This implies the preservation of the area within the horseshoe as an essentially open area;

(3) Further development of a structure for each historic urban centre to be clearly separated from the others. This requires preservation of open buffer zones between cities on the ring;

(4) Expansion of the Randstad in a centrifugal direction. This expansion has to take place adjacent to towns located in the major traffic corridors radiating from the Randstad. Some of these towns will be completely new ones, built on newly reclaimed land in the former Zuiderzee;

(5) Continued improvement of the transportation and highway system of the Randstad.

Thus the ring of more or less equally important centres around an open inner area will be deliberately maintained. Instead of filling the open area, it is advocated that its growth should be kept within limits.

To some this may not be self-evident. The area is the centre of gravity of the Randstad. A location within it would offer a freedom of choice of places to work for the resident, open up a large and diversified labour reservoir and make accessible a large market for the employer. The question might be asked whether highly specialized functions serving the whole of the Randstad should not be located in the very centre of the open area.

The answer to the last question is relatively simple. A new super central business district in the heart of the open area would not easily compete with the existing centres on the ring. It would not easily develop into a true heart of a metropolis. And with existing centres being as they are, there is no great need for it.

It is thought more advantageous to preserve the open character of the area. Keeping it essentially open does not mean that every development should be kept out. It means that development should not be unduly large and that it should be concentrated in only a few places.

In this way a large amount of semi-urbanization can be avoided and a clear structure can be maintained. The historic centres, with all the richness of their historic past, will not be sapped. Arteries for fast and convenient transportation between agglomerations of the Randstad can easily be created, whether they will be diagonal or whether they will run along the inside edge of the urban ring. Finally, an open space of large dimensions will be found close to the millions of people living in the cities on the ring. Also space for unforeseen developments will be preserved.

SOME EMERGING PROBLEMS

The ultimate result will depend to a large extent on the strength, quality and sense of co-operation by planners

and administrators, as well as on the organizational and legal framework of planning. At this point a few emerging problems should be considered.

One is the rapid expansion of several villages in the open inner area. The inflow of people, who originate in the cities and commute back to them can hardly be condemned completely. But it should be kept within limits and properly guided.

Although there still is considerable hesitation to apply negative measures, municipal plans and regional plans can go far in restricting growth. Moreover, the central Government has a right to raise objectives to developments which it considers not in accordance with existing plans.

A further restrictive measure is the phasing of extension plans. This would make it possible to apportion planned growth to each subperiod, and thus better control development over the whole period of the plan. Existing legislation implicitly enables the Government to apply such "period-planning". Under the new planning act the development plan can explicitly postpone development of one or more locations until a date indicated in the plan.

Legal possibilities are one thing. Their actual application is another, for pressures on local authorities are strong. Not all of authorities can be expected to always resist the temptation to allow developments which from their point of view seem promising. Also, curbing growth by restrictive measures alone will never do. Planning measures can only be successful if they are part of a comprehensive policy which influences the growth factors themselves, and prevents pressures from growing too strong.

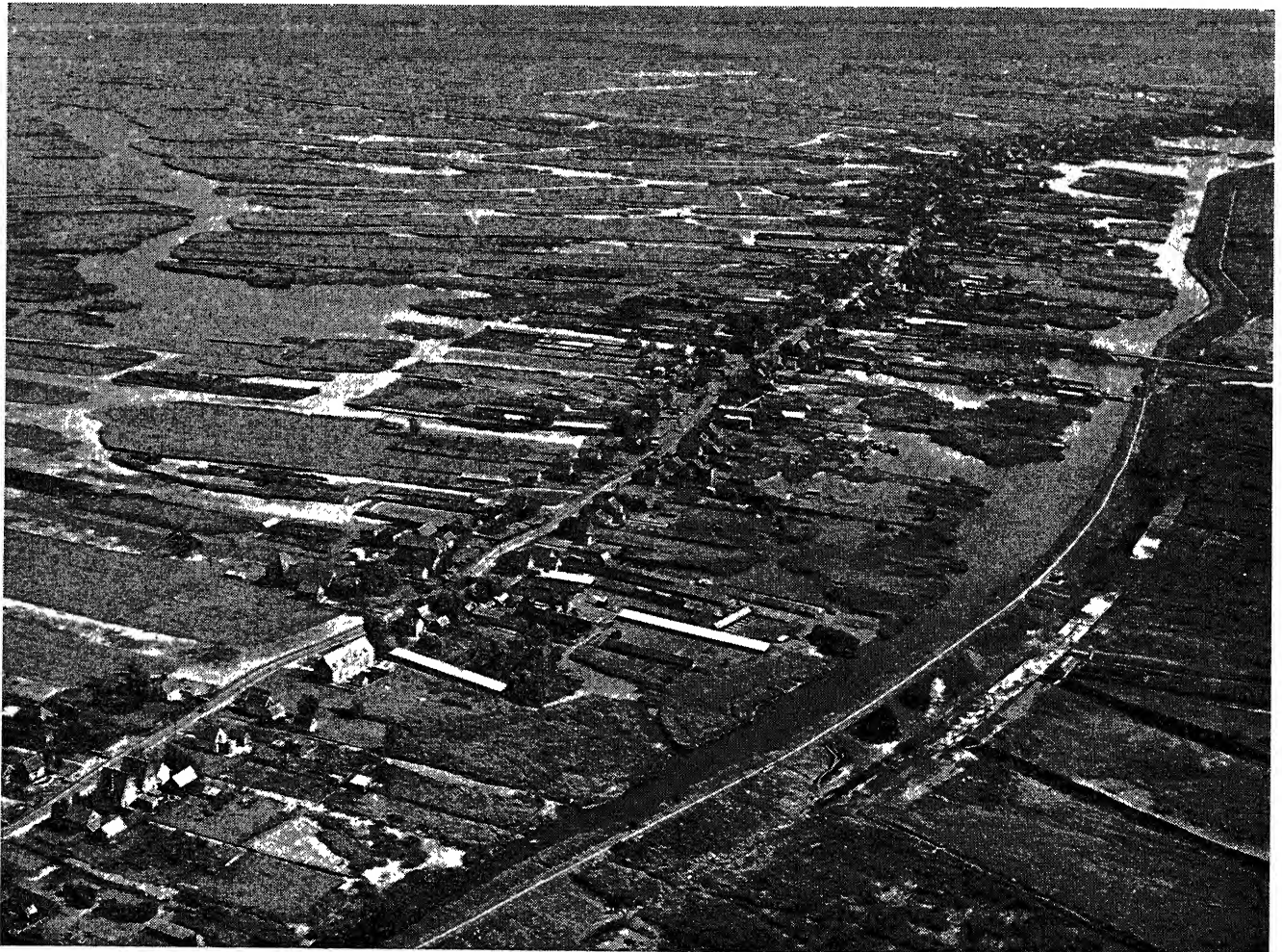
These pressures mainly pertain to residential and industrial expansion. New industries should not only be kept from settling in undesirable places by not making positive preparations for industry in the extension plan of a municipality, but also by convincing the municipality, that it should keep them out. This of course will not prevent commuters from taking up residence in such municipalities.

In the field of planning and development the foregoing means (1) that the measures which stimulate growth of other regions in the country—at present through subsidies for industrial development and improvement of the infrastructure—will have to be continued; (2) that efforts should be doubled to stimulate further improvement of the residential and other qualities and amenities of the Randstad cities (this will probably imply a larger percentage of single-family homes where but little extra land is required, yet where privacy is maintained); (3) that certain selected areas adjacent to existing villages or small cities should be specially developed.

A second emerging problem is that cities now require larger areas for the same number of people. This is due to such factors as increased space needs for traffic purposes and the necessity of allocating a larger amount of space for amenities.



Credit: Netherlands Information Service



This means that the Randstad agglomerations will occupy larger areas sooner than was thought necessary. Moreover, some major cities have become almost fully built up now and find their further expansion blocked by municipal boundaries and natural barriers. This raises the problem of how an eventual expansion penetrating into the open inner area should be guided.

Again restrictive and guiding measures can be used. But other measures are needed. Municipalities on the ring should be convinced that they will have to be *selective* in attracting and/or admitting industries. Since the national Government participates financially in public works (e.g., the digging of new port entrances), the question might be asked whether it should not have a say in the selection of industries to be allowed in areas thus opened up.¹ The value at stake may be so important that interference by the national Government may be desirable even when it does not take part financially.

All of this may help. But the Randstad has economic potentialities quite its own and they will induce a growth large enough to make it necessary to recognize and face the problem rather soon.

Although the Randstad cities should primarily expand in a centrifugal direction, some further growth in the open inner area probably cannot be avoided. It should preferably take place in the form of lobes of limited width, which are not separated from the main urban body by intervening stretches of countryside. They should be kept from penetrating too deeply into rural areas. The latter can be attained by extension plans, but it might also be desirable to delimit the lobes on their outer ends by major barriers such as freeways.

In isolated cases expansion of lobes will be impossible. Then a nearby village will have to be developed into a major and rather compact out-city. A separating green zone should then be maintained.

These two examples of emerging problems clearly demonstrate that planning metropolitan areas is a job which never ends. It demands constant attention, a considerable amount of flexibility (which should not be confounded with weakness) and appropriate and timely measures.

¹ In the Netherlands, land prepared for industrial development is most often owned by the municipalities.

THE RANDSTAD IN INTERNATIONAL PERSPECTIVE

Many major metropolitan areas of the world grew to a large size during the early steam and coal period. These people had to live in a concentrated pattern. The distance which could be covered between residence and workplace was small. When railroad and electric trolley came to provide better transportation, expansion took place at lower densities and in an axial pattern. Later on, use of the automobile led to more diffuse forms of expansion, but both axial expansion and diffusion emanated from the large urban mass which already existed.

The result is an endless expanse of concrete, steel and stone. Only at twenty-five or more miles from the center is open country reached. In addition, the large metropolitan areas of this type show many severe problems of traffic.

Secondly, virtually all large metropolitan areas have grown to metropolitan configuration in an era in which proper planning was not provided. They have grown according to the dictates of money and technology and not for man. Current planning, therefore, must be largely remedial. Apart from that, there is still a bewildering confusion of jurisdictions, and little co-ordination of planning on a metropolitan basis. Planning of satellites, growth restrictions, green-belts, star-shaped expansion and the like are planning devices advocated for alleviating the problems.

In the Netherlands metropolitan planning has a quite different starting point. A decentralized and open structure is already there. The task is to further develop it as such. There will be no excuse if a situation arises which resembles the one existing in so many metropolitan areas, for we have been warned.

There is a unique opportunity to develop a modern metropolis which will be adapted to the exigencies of the motor age and which will be truly "urbane" at the same time. It should truly be a place to realize "the good life" in a deeply human sense.

Although some weaknesses have become apparent, there is nevertheless room for modest optimism! But planners and administrators should be alert and they should be endowed with vision and strength.

Netherlands metropolitan growth: Central Amsterdam

Inheriting a promising metropolitan pattern but facing a great scarcity of land and confronted by major water control management problems, the Netherlands must carefully control metropolitan expansion to preserve its decentralized structure

(Top left) Central Amsterdam

(Lower left) Netherlands metropolitan growth: area north of Amsterdam

METROPOLITAN PLANNING IN POLAND*

JULIUS GORYNSKI

The purpose of this paper is to discuss the planning of metropolitan regions in a planned socialist economy, and to illustrate them by experiences of the post-war period in Poland.

It should be borne in mind that in the immediate post-war period Poland was faced not only with the tasks of a country out to step up its economic development on the basis of a socialist plan but also with factors non-economic in origin. They included:

(1) The military destruction of towns and countryside. This varied. Warsaw, the Baltic coast and Wroclaw were greatly devastated while there was little damage in the Upper Silesian industrial region or in Cracow;

(2) Large-scale population migrations characteristic of the first few years after the war;

(3) The emotional factor, which sometimes had unexpected and violent repercussions on the economy. This can be exemplified by the surging of the population to the completely destroyed city of Warsaw—a return completely unjustified by the prospective living conditions there; the reconstruction of the Old City of Warsaw in its historic form, in spite of difficulties and increased investments of transforming the capital in the course of its reconstruction into a functionally modern town.

Two definitions must precede the analysis. The first covers the idea of a metropolitan region. By this term we mean an area with a particularly high degree of urbanization, measured in figures such as the density of non-agricultural population per hectare, the value of urban and production investments per unit of surface, intensity of production expressed as the value of total production *per capita* or per surface unit.

Secondly, it should be made clear that by metropolitan planning we mean simply regional planning in relation to the metropolitan area. The only specific characteristic of metropolitan planning is that the links of town planning appear more clearly than in the regional planning of rural and mixed areas. It means that physical composition and architecture play a more important role.

All regional planning must be based on extensive and many-sided regional surveys. The method of regional studies is the most profound and developed part of regional planning, so much so that sometimes we consider equally important the idea of regional surveys,

which though essential are only a part of regional planning. The purpose of planning, however, is not to become acquainted with the existing state of things or even to make a correct forecast of future development. It is primarily an active and conscious influencing of this future development to guide it in a desired direction.

A planned economy helps carry regional planning beyond the stage of even the most profound studies. It may also become a factor linking physical facts in space with the aims of an economic plan.

There exist, of course, intermediate states between complete disregard for economic direction and an economy planned in all its elements. There are occasions when economic direction, having at its direct disposal only one or a few elements, may intervene, provided that this intervention is done properly and in due time.

Such activity is possible but difficult. In practice the probability of realizing the aims of regional planning is much higher in a planned socialist economy. However it would be a mistake to think that the realization of the plans follows automatically as a consequence of planning.

POST-WAR URBANIZATION IN POLAND

The economic structure of Poland has been radically changed and is still changing. These changes are expressed by figures showing the division into urban and rural populations, the number of workers employed into agricultural and non-agricultural occupations, and finally the size of industrial production, the localization of investments and the structure of the size of the towns.

Table 3 shows that in spite of the absolute increase in urban population the distribution according to the size of town shows significant change only up to the limit of population of 10,000, where there is a relative decrease, and among cities of 100-200,000 inhabitants where a considerable increase is to be seen. It is also worth stressing that the absolute increase of the number of towns of more than 100,000 inhabitants from sixteen to twenty-two took place only in the years 1950-1960.

CAUSES AND COSTS OF METROPOLITAN GROWTH

The growth of metropolitan regions is not automatic but is associated with economic growth which is in turn subject to many-sided research and speculation. While denying its automatic character we must however state the existence of certain spontaneous (or self-generating)

* Background Paper No. 3 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

Table 1. Growth of urban population

Year	Total population	Towns (percentage)
1931	32,107,000	27.4
1946	23,930,000	31.8
1949 (Estimates)	24,613,000	36.2
1950	25,008,000	39.2
1956 (Estimates)	28,080,000	44.9
1960	29,731,000	48.5
1964	31,339,000	49.4

SOURCE: *Statistical Yearbook*, 1960 (United Nations publication, Sales No.: 61.XVII.1); National Census, 6 December 1960.

Table 2. Percentage change of population in towns and urban settlements

Year	Total urban	Less than 5,000	5,000-10,000	10,000-20,000	20,000-50,000	50,000-100,000	100,000-200,000	200,000 and more
1931	27.2	2.9	3.9	3.4	4.4	2.1	2.4	8.1
1950	39.0	4.3	4.5	4.2	6.2	3.4	6.7	9.7
1956	44.9	4.1	5.3	5.5	7.0	3.9	5.4	13.7
1959	47.3	4.1	5.5	6.1	7.1	4.1	6.3	14.1
1964	49.4	3.6	5.5	6.5	7.3	5.1	5.6	15.8

SOURCE: *Statistical Yearbook*, 1960 (United Nations publication, Sales No.: 61.XVII.1).

Table 3. Relative percentage change of population in towns and settlements

Year	Total urban	Less than 5,000	5,000-10,000	10,000-20,000	20,000-50,000	50,000-100,000	100,000-200,000	200,000 and more
1931	100	10.7	14.2	12.6	16.0	7.9	9.0	29.6
1950	100	11.1	11.6	10.8	15.9	8.6	17.1	24.9
1956	100	9.0	11.7	12.3	15.7	8.6	12.1	30.6
1959	100	8.8	11.7	12.8	15.0	8.5	13.4	29.8
1964	100	7.3	11.1	13.3	14.7	10.4	11.2	32.0

SOURCE: *Statistical Yearbook*, 1960 (United Nations publication, Sales No.: 61.XVII.1).

processes. These act as stimuli in periods of development, while in periods of decreasing development they moderate the reduced tempo in metropolitan regions. The primary factor is probably a social one, due to the attraction of living in a well-equipped urban region, where the fact of concentration of people, economic goods, and production processes also produce a feeling of greater security against the difficulties of living. This trend to live in a bigger centre is weakened only in exceptional circumstances, and the opposite trend appears probably only during wars.

The attractions of a big centre not only influence individuals on securing and improving their own lives, but also influence institutions. Here the main factor is the hope for better opportunities, improved efficiency and a decrease in initial costs. Industrial establishments

and other institutions also find it easier to obtain staff and their social costs are lower. This calculation is often a false one, or is expressed by transferring these costs to the state or other public institutions.

A socialist enterprise, as any other, tends to minimal costs and this is done by economic analysis. In an individual enterprise it is merely a micro-economic calculation, and only at a higher level does it develop into a macro-economic analysis. The results of these two types of calculation are not always convergent. They may even be of a contradictory character. To find methods to resolve them is one of the more important aspects of the policy and methodology of a planned economy.

A series of factors contributes to the high efficiency of productive fixed-capital investment when seen from the micro-economic viewpoint in metropolitan regions. These

factors can be due to the existence of satisfactory and well-functioning transport, the vicinity of markets and operating enterprises. They generally reduce initial costs and some productive ones are lower than in an area of smaller economic activity. And so the convergence of elements attractive to individuals and to institutions leads to cumulative processes, increasing the tempo of the urbanization and industrialization of the area.

It would be wrong, however, to consider this as an objective law to which we should passively surrender. There have been enough warnings on the part of sociologists, hygienists and town planners, to repeat here the argument pointing to the negative results of a too extensive concentration of population and industry. Therefore we shall limit consideration here to the macro-economic aspect of this matter.

We are particularly interested in the extent to which it is possible to develop productive forces within a metropolitan region from the point of view of the national economy. The concentration of fixed capital can be measured by calculating its value *per capita*. This index will be the sum of two elements: (a) the cost of productive investments; and (b) the social investment cost. In discussing the first of these factors we stated that a metropolitan concentration may result in its relative decrease. On the contrary the second factor increases in line with the concentration of population. On a macro-economic scale the whole sum of these costs should be considered, and not only the first factor as is done on a micro-economic scale by individual enterprises.

We shall consider now the dependence of social costs on the size of the town. Social costs in highly urbanized centres appear most distinctly in the living conditions of the inhabitants. Living conditions in a big town make it necessary to equip them with special amenities, so that the individual cost and the cost of current investments is higher in big towns *per capita* than in smaller towns. The need for some facilities appears only in bigger towns, e.g., an underground railway, trams, etc. In relation to other needs such as sanitation, water supply, sewerage and landscaping, the scale as well as the cost *per capita* increase with the size of the town. And so there appear two contradictory tendencies in the towns. On one side the increasing concentration of population permits an increase of productive effectiveness. On the other hand, in other elements, most frequently of derivative and indirect character, the costs grow faster than its population. This means that through complex economic analysis it is possible to determine the optimal size of a town according to its over-all efficiency.

In the course of research on the elaboration of the perspective plan for 1975 and of the physical plans of particular towns, figures were found concerning fixed capital *per capita* in towns of various size. These calculations for urban norms adopted in Poland, cover the investments on housing and social amenities. They do not cover investments for work places, rail transport, ports, electric power stations, gas works, etc. The following table presents the results of the calculations:

Table 4. Costs of investments by town size

Populations of towns	Per capita investments in thousand zlotys at 1956 prices	
	Total cost	Cost of communal amenities
Up to 10,000 . . .	42.2	7.8
10,000-20,000 . . .	43.2	8.0
20,000-50,000 . . .	44.5	6.6
50,000-100,000 . .	42.1	7.2
200,000-300,000 . .	44.6	9.0

Comparing these values with the investments necessary for the founding of one work place in any branch of industry, and assuming that each employee has other persons to maintain, it appears that the non-productive costs of investments are considerably higher than the average cost necessary to set up one work place. The only exceptions are the branches of production which absorb most capital, such as coal mines, foundries, electric power stations, etc. These calculations show that in economic analysis connected with the location of industry it is necessary to take into account the efficiency of the costs of housing of employees. The above-quoted results correspond to investments for the construction of a new town from the foundations. In Poland the building of new towns may be considered only as an exceptional one, and for the current needs of economic policy it is more important to determine what supplementary investments should be made for housing *per capita* in different groups of existing towns. Such calculations were based on the data of several master plans of the towns. The investments necessary for housing per one new inhabitant in 1961-1965 served as the basis. The discrepancy between investments of particular towns belonging to the same size group was fairly high because of the differences in the amount of funds invested and their expected rate of growth.

In these calculations proportional costs were obtained for particular groups of towns. These proved that towns of 20,000 to 50,000 inhabitants require the lowest investments. The investments *per capita* in Warsaw for the present five-year period were shown to be more than double those necessary for one inhabitant in the least expensive group, i.e., in towns of 20,000 to 50,000 inhabitants. Taking into account the effectiveness of the location of particular enterprises, and investments connected with ensuring appropriate living conditions for the inhabitants, makes it possible to prevent the disguise of social costs.

It should be emphasized that the lowest investment costs *per capita* in towns of 20,000 to 50,000 inhabitants does not mean that new working places should always be located in them. It has already been stressed that social costs and the optimal productivity of urban areas present two contradictory trends. First are the increases in productivity processes in line with the growth of the town; secondly, the growing social costs, where the costs of housing are an element of considerable importance, result in a decrease of efficiency. It may therefore roughly

be assumed that optimal global efficiency in Poland can be achieved by giving preference to the location of industry in towns of 50,000–200,000 inhabitants.

The above statements are still general. The master plans for 500 towns comprising more than 80 per cent of the whole town population, providing among other facts some data concerning planned investments in the five-year plan of national economic development, led to the possibility of obtaining more detailed economic analysis. This is particularly important since in the course of research work on the physical and economic planning of particular towns there appeared a certain regularity in the shaping of investments connected with the growth of existing towns. This has been called a threshold principle.¹ It also appeared that investments in the development of towns do not increase in proportion to the growth of population, except irregularly. If existing basic installations (such as sewerage treatment facilities) reach their marginal efficiency, any further increase of the town requires considerable single investments for facilities out of proportion with the population growth. This additional development has to be calculated as a rule from capacity reserves for the future. The possibility of obtaining data on development thresholds based on the physical planning of particular towns is a useful indication for the policy of the development of individual towns, since the knowledge of these thresholds permits a planned regulation of the development of the towns. When the size of the town approaches the marginal value of its threshold, its further development can be checked to avoid or postpone for the future the necessity of further major investments. If however there are other reasons in favour of its growth to the next size group, the growth may then be speeded up. Thus the big investments necessary to overcome the threshold would be utilized more quickly and efficiently.

With the considerable over-population in agriculture existing in Poland and high birth rate, further urbanization of the country is imperative. From the theoretical point of view the existence of an economy planned by central authorities permits proportional location of productive forces, and concentrated metropolitan regions should become unnecessary. However, limiting urbanization as an aim in itself would not take into account its economic consequences. The growth of highly urbanized areas in Poland is by no means a result of the cumulative action of an already existing concentration of urban population, but is first of all a consequence of the minerals, sources of energy, transport conditions, ports, etc. Opposition to urban processes developed on such a background would mean a simultaneous hampering of economic development.

It is known, however, that in metropolitan regions linked directly with the physical conditions of the environment a constant growth and development of co-operating enterprises and even of institutions and factories not connected with the local raw materials background or

local market can be observed. One of the reasons is the transport rates connected with a uniform system of wholesale prices throughout the country.

There are also contradictory trends. The growth of work establishments in highly urbanized centres is hindered above all by difficulties in the availability of manpower. With the policy of full employment a reserve of manpower is in practice available only in rural areas where there is overpopulation. But the utilization of these reserves in the towns requires additional housing which at present is difficult to provide. And so the processes of the development of enterprises not connected with the physical resources of highly urbanized centres cannot be great. There may however be attempts to attract workers away from those enterprises. Such tendencies are successfully overcome by an appropriate wage policy. Finally, taking into account the considerable influence of the central planning bodies on the location of new enterprises or the development of existing ones, the Polish economy maintains sufficiently effective measures to limit urbanization. In the metropolitan regions existing in Poland and due to the specific conditions of the reconstruction period many enterprises could be transferred to under-developed areas with considerable advantage for those regions and for the country as a whole.

The development of under-developed regions may, nevertheless, be implemented only gradually; because of the lack of capital investments. Railways, roads, water and energy supply require such high single investments that they surpass the present possibilities of the national economy. In regions of low fixed capital investments and where there is low economic development, our economy first equips these centres where the raw material background and other physical values create favourable conditions for fairly quick significant economic results.

And so the processes of a more rational location of enterprises not connected directly with highly urbanized centres have to be spaced in time according to increasing economic possibilities. Among the measures undertaken to prevent the growth of big-town agglomerations the policy of technical reconstruction is noteworthy. With the necessity of replacing wornout and obsolete productive equipment more rapidly, technical reconstruction is carried on with the idea of decreasing the demand for manpower.

The existence of metropolitan regions produces secondary results throughout the area. The concentration of employment and the individual tendencies of the population to live in big towns weaken the economic potential of minor towns. There exists in Poland a large network of small towns and settlements. In the previous capitalist period, these towns and settlements of up to 20,000 people based their existence on trade and crafts for the surrounding agricultural regions. In the post-war period with the high rate of industrialization together with the simultaneous limitation of crafts and the reorganization of trade in the rural areas, a number of small towns lost their basis for existence. These began to depopulate, or their inhabitants had to travel to other towns to work.

¹ See Beleslaw Malisz, "Control of urbanization", part three of this publication.

The authorities submitted the problem to detailed analysis. As a result directives and programmes have been worked out for small towns and are being executed. Within the framework of the local physical plans and the elaboration of plans for economic development, functions of particular towns have been laid down. In the vicinity of metropolitan regions small towns take on the function of satellites. The same function was determined for towns

and settlements situated in areas with a high concentration of industrial investments. As far as the activation of little towns is concerned the plans create favourable conditions for them, or they determine material measures for the development of small industries, services and administrative bodies. The activation of small towns is considered as one of prophylactic measures against excessive urban agglomerations.

METROPOLITAN PLANNING IN YUGOSLAVIA*

DUSAN STEFANOVIĆ

There were five cities with more than 100,000 inhabitants in Yugoslavia in 1959: Belgrade (542,000), Zagreb (470,000), Ljubljana (155,000), Sarajevo (176,000) and Skopje (167,000). In spite of the loss of about 1.7 million persons during World War II, the total population in Yugoslavia increased by nearly 50 per cent in one third of a century. The development of these cities is closely connected with the economic and social progress of the country. However, it would be useful to take a brief look at the basic factors in the development of the country as a whole before discussing the problems of these cities and their solution.

Two processes are particularly significant in the development of Yugoslavia, besides the high natural increase in population:

(1) Rapid economic progress attained primarily through industrialization;

(2) Development of a socialistic society.

The establishment of the socialist system in Yugoslavia after World War II greatly influenced the goals and tempo of economic and social progress. For the moment it is only important to note three factors in the Yugoslav system which significantly influenced the economic and social development of the country:

(1) The development of the public economic sector, based on the social ownership of the means of production;

(2) The inauguration of the system of economic planning. The application of this system was greatly dependent

(3) The establishment of the system of workers' management in public economic enterprises and of local self-government. This factor was the most important. Together, these systems are the important elements of the political system of Yugoslavia.

When considering metropolitan areas, the following question is of special interest: how has this rapid economic and social transformation affected the process of urbanization? One can obtain a general impression from the data in table 2¹ (on page 112).

The table shows that:

(1) The present rate of urbanization is twice as high as before World War II (about 4 per cent annually), so that the urban population accounts for about 60 per cent of the total increase in population of Yugoslavia;

(2) The post-war increase in urban population has been well distributed among large, medium and small-sized cities, whereas it had been concentrated in the largest towns before the war;

(3) The absolute level of urbanization is still low, about 26 per cent in 1959;

(4) The relative increase of rural population is half as high as in the pre-war period; but the absolute increase of about 1 million persons during the years 1948-1959 is still significant.

There has been a clear policy to encourage industrialization and other non-agrarian activities in the villages and small towns. The non-agrarian population increased during 1948-1959 by about 4.3 million persons. Sixty-three per cent of this increase was due to the transition of rural population from agrarian to non-agrarian activities. Thus, the economic and social transformation of the country took place with relatively little dislocation of the population from the villages to the towns.

The data show that in Yugoslavia a relatively well-balanced development has been realized. The large towns

¹ As there is not yet an official definition of town, the tentative criteria of the Federal Statistical Institute have been used here. According to these criteria, towns are considered settlements:

- (a) From 2,000 to 5,000 inhabitants, with more than 90 per cent of non-agrarian population;
- (b) From 3,000 to 10,000 inhabitants, with more than 70 per cent of non-agrarian population;
- (c) From 10,000 to 15,000 inhabitants, with more than 40 per cent of non-agrarian population;
- (d) Over 15,000 inhabitants, with at least 30 per cent of non-agrarian population.

The structure of the population is taken according to the 1953 census, but the size according to the situation in 1959.

Table 1. Agrarian and non-agrarian population, 1921-1959

(Percentage distribution)

Year	Total population	Agrarian	Non-agrarian
1921	12,095,000	79	21
1931	13,982,000	76	24
1948	15,901,000	71	29
1953	13,048,000	61	39
1959	18,431,000	50	50

ent upon the public economic sector, and the economic planning regulated the development of urban, regional and other settlements;

* Background Paper No. 2 prepared for the Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

Table 2. Rate of urbanization in Yugoslavia

(Population in thousands)						
<i>Cities and towns (1959 classification)</i>	<i>1921 census</i>	<i>1931 census</i>	<i>1931:21 index</i>	<i>1948 census</i>	<i>1959 estimate</i>	<i>1959:48 index</i>
In 5 cities over 100,000 inhabitants	405	656	(162)	972	1,509	(155)
In 50 cities from 20 to 100,000 inhabitants .	936	1,089	(116)	1,257	1,824	(145)
In 184 towns below 20,000 inhabitants	728	784	(108)	901	1,394	(154)
Total of 239 towns	2,069	2,529	(122)	3,130	4,727	(151)
(Percentage of towns)	(16)	(17)	(17)	(20)	(26)	(26)
Population in villages	10,476	12,005	(115)	12,712	13,694	(108)
TOTAL	12,545	14,534	(116)	15,842	18,421	(116)

have had a leading role in this development, but not more than was convenient from the economic, social and political points of view.

The further development of transport facilities, the economy and institutions (including planning methods) will accentuate even more the tendency towards the development of smaller settlements. Therefore, the goal of physical planning in Yugoslavia could be stated as the balanced development of large, medium and small-sized towns, and of villages, so that the inherited (and very significant) differences in levels of living between them may be gradually eliminated. Physical planning should significantly contribute to the optimum progress of individuals, families, smaller and larger communities and of the whole country.

ECONOMIC FACTORS

This balanced and decentralized growth is indicated by the level of non-agrarian economic activity outside Yugoslavia's five metropolitan centres. Only in administration and commerce is there a relative concentration in these metropolitan areas, which are also the capitals of the five states. Table 3 well illustrates this.

The policy of decentralized industrialization represents one of the most important factors in the balanced development of large, medium and small-sized towns. This is the main characteristic of the process of urbanization in Yugoslavia after World War II. Between 1954 and 1959 the increase of employed persons in industrial enterprises was about the same in the five cities (index 1959:

Table 3. Distribution of non-agrarian population, 1953

(Population in thousands)

<i>Employed population</i>	<i>Five cities over 100,000</i>		<i>Other localities</i>		<i>Total in Yugoslavia</i>	
<i>Distribution of active non-agrarian population</i>						
	<i>percentage</i>		<i>percentage</i>		<i>percentage</i>	
Industry and mining	95	(15)	535	(85)	630	(100)
Building industry	21	(10)	182	(90)	203	(100)
Transport	31	(18)	138	(82)	169	(100)
Traffic and commerce	59	(24)	184	(76)	243	(100)
Handicraft	56	(15)	311	(85)	367	(100)
Administration	132	(27)	350	(73)	482	(100)
Service and other	55	(10)	474	(90)	529	(100)
Non-agrarian active population	449	(17)	2,174	(83)	2,623	(100)
<i>Structure of active non-agrarian population (percentage)</i>						
Industry and mining	21.2		24.6		24.0	
Building industry	4.6		8.4		7.7	
Transport	6.8		6.4		6.5	
Traffic and commerce	13.2		8.4		9.3	
Handicraft	12.4		14.3		13.9	
Administration	29.4		16.1		18.4	
Services and other	12.4		21.8		20.2	
TOTAL	100		100		100	

SOURCE: Unless otherwise indicated, all data in this study are taken from statistical yearbooks and other publications of the Federal Statistical Institute.

1954 = 152) as in other localities (index 148). In recent years, however, construction activity in the large cities has been greater than in the country as a whole. This is due to the increased efforts to meet the needs for dwellings where the population increases were approximately four-fold higher than in rural settlements.

As noted, the 1953 census revealed that the five metropolitan areas had 18 per cent of all employed persons in transport. By 1959, the total had risen to 26 per cent. However, in 1954, 10 per cent of all railway passengers departed from five metropolitan areas. In 1959 it was 9 per cent. The same cities loaded 5 per cent of the freight in 1954; but in 1959 only 4.5 per cent of total transported goods. In 1954, the national airline transported 61 per cent of all passengers to the five metropolitan areas; but only 57 per cent in 1959.

The five largest cities increased their consumption of electrical energy from 451 million kWh in 1954 (16 per cent of total consumption of the country) to 1,150 million kWh in 1959 (17 per cent). Of total production, which increased 237 per cent,² the consumption in the five largest cities increased 256 per cent and in households 354 per cent. The average per inhabitant in the five largest cities was 763 kWh in 1959 (331 in households), and in other parts of the country 328 kWh (fifty in households).

Despite decentralization the effect of the development of great cities on the progress of agriculture has been important. Thanks to this development, as well as to the industrialization and urbanization of the whole country,

² Production increased from 1,173 million kWh in 1939 to 8,106 million in 1959, or 692 per cent.

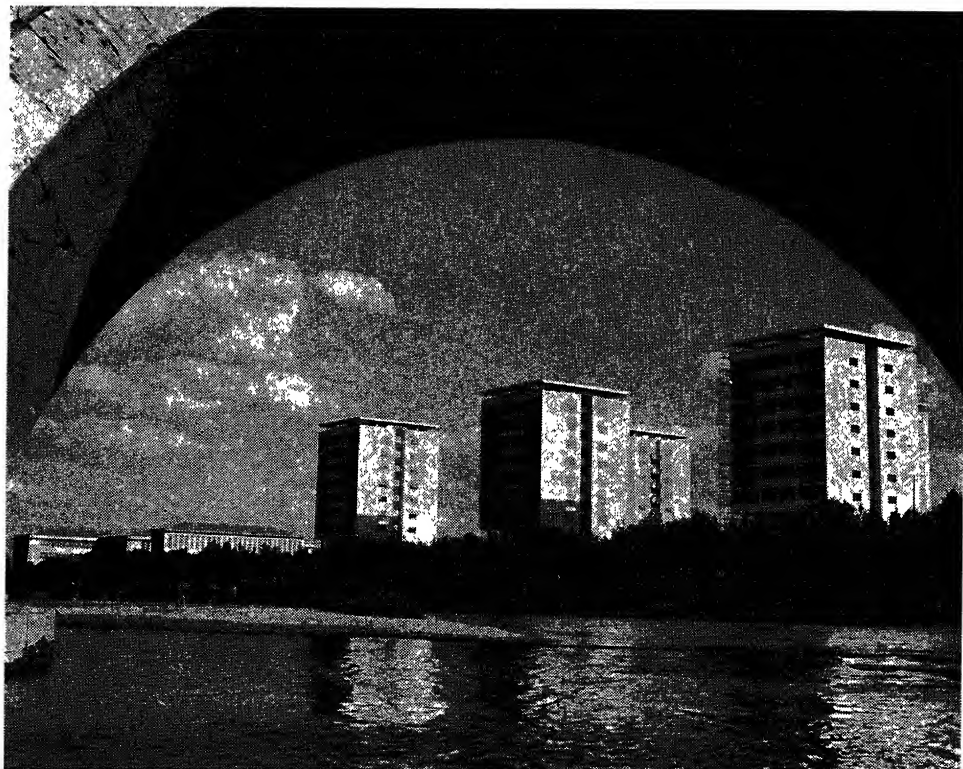
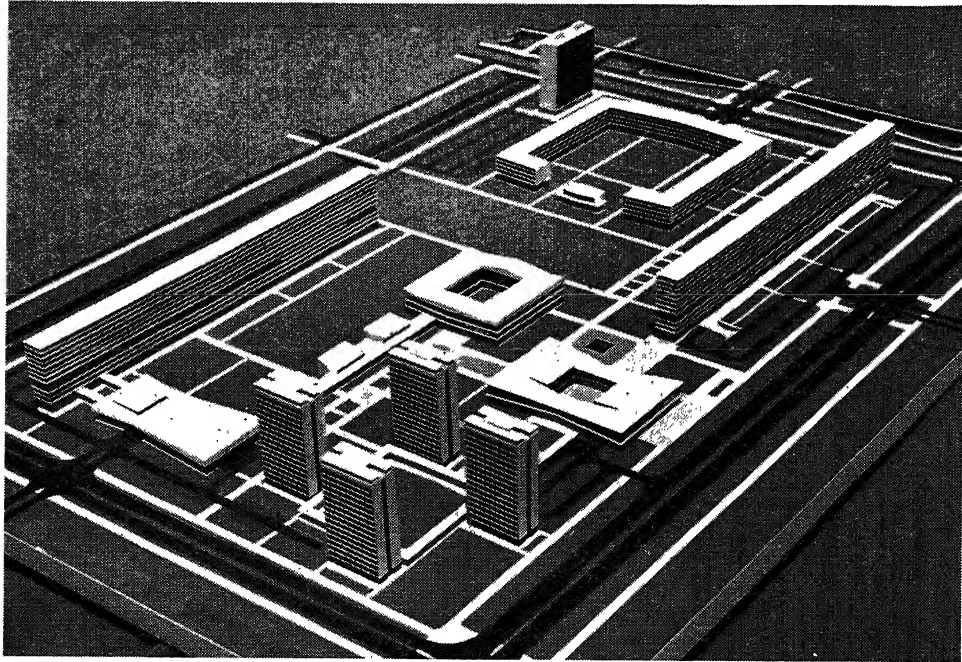
a big part of the surplus of agrarian population has been absorbed by industry and other non-agrarian activities. Thus the phenomenon of agrarian over-population, that for many decades hindered the progress of agricultural production, has been radically diminished. Industrial development has improved conditions for the mechanization of agricultural production. Urbanization has also significantly stimulated agricultural production for urban needs. Therefore, the stagnation of agricultural production in the first post-war decade, when all resources were oriented towards industrialization, has been followed by a doubling of pre-war output. This rapid progress has made it possible to halt the net importation of food after 1958.

But metropolitan areas also affected the development of agriculture in a direct and very characteristic way. Taking advantages of economic planning and of the investment system, Yugoslavia has directly organized agricultural production, adapting it to the needs of urban population. This progress in the cities was mainly attained by (a) organizing large agricultural enterprises in the public sector with workers' management, social investments and other methods used in all economic enterprises; and (b) co-operating with individual farmers through organizing agricultural co-operatives, long-term contracts, public long-term loans and programmes for the development of specialized production.

The largest action of this kind occurred through the establishment of the trust "Belgrade" by the City Council of Belgrade. About 30,000 hectares on the left bank of the Danube, which had been almost non-cultivable, was ameliorated and organized into a system of agricultural



New neighbourhood in Sarajevo, Yugoslavia



enterprises for the production, manufacture, preservation, storage and sale of food (milk, meat, vegetables, etc.) for the city. This big agricultural trust is effectively influencing the whole market and improving agricultural production by the co-operative and the private sector as well. The effect has been augmented by parallel measures in transport, storage, commerce, etc., all co-ordinated by plans of the City Council. Considering similar measures undertaken in other cities, the conclusion could be drawn that these cities are playing an important role in the efforts to improve agriculture.

The same could be said of the production of other consumer goods. Increasing urban population creates new demands for consumer articles. The adjustment of production to these new demands is realized not only through economic planning, but also through the spontaneous influence of the market (which in principle is free in Yugoslavia). The markets and economic plans in the five major cities have a leading role in the growth and change in the production and consumption of consumer goods, especially the new articles needed for a higher standard of living.

Therefore, the economic role of the five major cities in Yugoslavia should not be judged only by the fact that they contribute to a higher national income, but also by their influence on consumption for the whole economic development of the country, and particularly by their influence as pioneers of the higher standard of living.

As indicated, this leading role of the Yugoslav metropolis does not exceed the limits justified from economic, social and political conditions. This leading role has had a permanent influence on other localities. Already, thanks to the measures of economic planning and to the influence of the whole social system and policy, a relatively well-balanced development of large and small towns and villages has been achieved.

As for future improvements, one would expect better economic conditions in the countryside. The existing disparity between large and small settlements originated from historical circumstances and should be eliminated as much, and as fast, as possible.

SOCIAL FACTORS OF METROPOLITAN PLANNING

Humane goals are the essential foundations of city planning. But serious obstacles are met in the realization of these generally assumed principles. These might be grouped into (a) material obstacles resulting from insufficient economic development (especially in develop-

ing countries and areas); and (b) the obstacles in the economic and social system itself. In various countries one or both of these difficulties may prevail.

It has been mentioned that the main obstacle to the realization of planned goals in Yugoslavia—in which human well-being is the basic aim of all planning—stems from limited material welfare due to economic and cultural backwardness, created by the unstable history of the Balkan Peninsula through several decades and centuries. These obstacles are being removed at a relatively fast rate. But the absolute level of development of Yugoslavia is still low in comparison with the developed countries. With a *per capita* of about \$US 360 in 1960, Yugoslavia just reached the lower range of the middle developed countries.

A balanced economic and social programme is the basic aim of policy in Yugoslavia. This policy was initiated during the first years following World War II and has led to the changes especially in investments. With a backward economy it would be illusory to expect significant results in the social field. Yet optimum economic development could not be reached without parallel social measures. This policy of balanced economic and social goals has now been accepted in principle with the necessary adjustments to suit new conditions.

It should be stressed that in Yugoslavia social policy normally includes the entire population, that is, the active amelioration of living conditions of all citizens and the prevention of potential social problems.

Social problems in cities mainly stem from fast growth, particularly the influx of rural population. The problem then arises as how to secure food and other supplies for rapidly increasing urban population; how to settle them in dwellings; and how to employ them; and finally how to adapt them to urban way of life. A special problem is created in social assistance by the employment of women and the settling and education of children who lost their parents during the war, or those whose parents are employed.

In food and consumer goods the situation was rather difficult in the immediate post-war years. Backward agriculture, badly damaged during the war, could not support the growing urban markets. The existing trade network and supply organization fulfilled very defectively their mediation between production and consumption. Due to insufficient production and undeveloped trade, there were serious difficulties, both in the supply of nutritional articles, and other consumer goods (e.g., textiles). At that time, it was difficult to maintain a minimum standard

(Top left) New Belgrade

This major expansion of Belgrade on the left bank of the Sava River will accommodate nearly 300,000 people when completed

(Centre left) New Belgrade neighbourhood plan

A superblock for 11,000 persons; the neighbourhood central area is devoted to an 8-grade elementary school, children's institutions and playgrounds, while the shopping facilities and community centre are nearer the boundaries

(Lower left) Vardar River in Skopje, Yugoslavia

New apartment buildings

of living, as all efforts were directed to industrialization (mainly of basic industry and energy resources) to create better conditions in the future. Therefore, rationing of non-agrarian products was continued after the war. This was abolished in 1952. Free functioning of the market was gradually restored through adequate supply (provisional control of prices, establishment of sufficient stocks, etc.). These measures, as well as rapid increase of industrial production of consumer goods and accelerated development of agricultural output, have contributed significantly to consumption in the late nineteen fifties.³

In housing the problems were more acute in large cities than in other localities. But efforts were also more intensive. As a result the quality of housing stock has become much better in the cities than in the whole country (though still low in comparison with cities in developed countries).

The housing shortage was due not only to insufficient and bad quality of housing stock, but also to the rapid increase of population in metropolitan areas, which could not be followed by corresponding house construction for many years after the war.

The rate of house construction doubled from 1955 to 1960. The present rate is higher than the current needs for the settlement of new inhabitants of these cities (as in the whole country, too), so that the shortages from earlier years are gradually being alleviated and bad dwellings from the pre-war period are being replaced. The rate will double again by 1965. This dynamic increase of construction and the improvement of housing conditions are the direct result of general economic progress, particularly in industry.

Housing institutions, especially the financial system, contributed greatly to the rapid progress in housing. The main characteristic of this system is that it is based on the co-ordination of efforts, both of individual citizens and of local and central organs, to improve house building and utilization of dwellings. This system differs from the forms of public assistance one finds in some western countries in that it is given not only to some categories of citizens (low-income groups), but to practically all of the urban population. In relation to both the western and eastern countries, an important difference is also found in the fact that the influence of administration is reduced to a minimum. Therefore, according to the western terminology, this system should not be called "state" but rather "co-operative" in the widest sense of the word, with very active assistance of municipal and other public bodies. This system helps to preserve the initiative and the right of citizens and their autonomous organizations to make decisions and reduces to a minimum the intervention of administration.

The creation of capital for housing constitutes one of the first and most important measures for solving housing problems in developing countries. This problem has been solved very successfully in Yugoslavia by the establishment of special housing funds in the municipalities.

These funds are supplemented by obligatory contribution, which economic enterprises pay out of their profits, and administrative institutions out of their budgets, in proportion to the total salaries paid (about 4 per cent). This contribution is paid to the municipality of the enterprise or administrative institution, without regard to where the workers and employees live.

By this method full autonomy of the commune from central authorities is achieved in housing finance. This is in accordance with the policy of granting maximum power to the local governments. The management of these funds is also relatively autonomous from municipal agencies. It is entrusted to a special board of citizens nominated by the plenary session of municipal people's committee. The board is not only a municipal organ but also forms a kind of association of housing co-operatives, working with economic organizations, administrative institutions and the citizens themselves.

The function of these boards is to finance housing construction and to manage apartment houses. The loans granted from this fund for building are determined by certain economic principles. The policy is to attract as much additional money from the economic enterprises and administrative institutions above their compulsory contribution and as much as possible from individuals. The dwellings, built with the financial aid from the fund, may be individually owned by the citizens. Individual owners must contribute to the building costs (usually 20 to 30 per cent) and repay loans obtained from the fund in twenty to forty years, usually at 1-2 per cent interest. When houses are built on public property the working collectives provide the contribution to the building costs. In cases where the board itself undertakes construction, the future tenants may pay advances of the future economic rent—houses being rented on first come first served basis. Thus, the funds represent not only a most important and stable financial basis for housing construction, but an efficient means to attract and control public and private saving.

The funds represent specific autonomous organizations of citizens, who on their own initiative associate together on the principle of obligatory mutual assurance and the possibility of getting investors for housing construction. But they are also an important factor in the building industry, as they collaborate with building enterprises in large-scale housing construction, production of building materials, design, etc. Long-term and annual programmes of house building can be prepared in due time, thanks to the stable income of funds. It represents an important quality of the system of housing because it facilitates planning of residential areas.

Some of the essential elements of this system are the nationalization of building land in towns (but not in villages), the limitation of individual ownership to two dwellings (the surplus over this maximum being nationalized with legal indemnity) and the social management of publicly owned apartment houses. According to the policy of reducing the role of administration and increasing citizen participation in all public affairs all houses publicly owned, i.e., built by municipal funds,

³ Thus the real incomes of industrial workers increased 32 per cent from 1956 to 1959.

public enterprises or organizations, or any other social body, are managed by the tenants themselves through special house councils.

The members of these councils are elected by all adults from among themselves. These councils collect rents which were raised in 1960 to an economic level, covering the maintenance and management costs and 1 per cent depreciation of the value of the house. Tenant councils take independent decisions on repairs and other affairs, and carry out these decisions.

The working collectives in economic organizations and administrative institutions have had a leading role in the construction of the dwellings. They allocate a significant portion of their profit to provide dwellings for their workers and employees. However, enterprises and institutions transfer a large part of the investor's duties to special committees of the workers and employees. But recently, there has been a strong tendency to associate citizens in housing co-operatives, or to gather directly around the municipal fund.

The principle of common engagement of citizens is expressed in all other fields of social life such as local and central authorities, economic enterprises, social organizations and other bodies as a method of solving different problems. But it is always realized in such forms that the influence of citizens in taking decisions and in their implementation, is secured as completely and directly as possible. Thus, administrative and bureaucratic influence may be minimized.

In education and culture very large programmes of action for the elimination of illiteracy have been carried out by extending obligatory scholarship from four to eight years, for improving the qualifications of workers, for raising professional qualifications, for elevating the general cultural level of the population, etc. In this field significant success has been attained by engaging communes, institutions and social organizations, as well as enterprises and other working collectives. The 1,747,000 elementary students in 1954 grew to 2,427,000 in 1959, and the 137,000 secondary students increased to 181,000 in the same period.

Until only the last few years university education was concentrated in the five metropolitan areas. Only during the late 1950s did it begin to expand to smaller towns. The number of faculties and colleges increased in the five cities from twenty-eight in 1939 to seventy-eight in 1953/54, and to ninety-seven in 1958/1959, and in all other localities from two before the war to eight in 1953/54 and to twenty-five in 1958/59. The student illustrates more clearly this progress:

The sixfold increase in students is the best illustration of the efforts made to secure the highly qualified personnel necessary for a rapid economic and social progress. But serious difficulties are being encountered in providing laboratories, etc. The existing situation is not satisfactory. For that reason an enlarged programme of school building is planned, based on the better economic conditions which have been reached in the meantime.

It should be stressed here that all education—primary, secondary and university—is publicly organized and free of any tuition. In education, as in health services, the principle has been accepted that the use of these institutions has to be as accessible as possible to all and that the costs should be covered by the contribution of all citizens in proportion to their income and independent of how they benefit by these services. Families with children receive childrens' allowances as long as they are studying. The system of scholarships is widely applied, especially by enterprises, municipalities and administrative institutions. Such assistance by the whole society facilitates university education for the provincial youth. It is true that they are still handicapped when compared to the students living in university centres, but the intensive building of dormitories is gradually ameliorating their living conditions. And continuing decentralization of university centres favours provincial youth. In 1960 seventeen new faculties were founded in ten different towns. Seven of these ten towns became university centres for the first time. In 1959, 12 per cent of all libraries, with 22 per cent of the books and 28 per cent of all museums were concentrated in five metropolitan cities.

In health care the five large cities accounted for thirty-two hospitals and 18,143 beds in 1954, compared with thirty-eight hospitals and 20,000 beds in 1959. In other localities the 204 hospitals with 45,863 beds in 1954 grew to 215 hospitals with 56,660 beds in 1959. The metropolitan concentration actually decreased from 28 to 27 per cent in that period.

With a relatively rapid economic progress, especially during the last years, conditions have become better for intensifying social development and for concentrating on a policy of balanced economic and social development. For the same reason a better balance in the development of cities and other settlements is being realized.

These changes are being realized in the financial field too. Thus due to gradual increase in individual income the introduction of economic rents have been realized recently as well as the increase to an economic level of prices of some services. The more consequent application of self-financing and the abolition of different kinds

Table 4. Enrolment in higher education

	1938-1939	Percentage	1953-1954	Percentage	1958-1959	Percentage
Five major cities	17,233	(97)	56,172	(97)	88,861	(92)
Other localities	501	(3)	1,762	(3)	8,029	(8)
Total for Yugoslavia	17,734		57,937		96,980	

of subsidies—which previously were necessary to develop some social services—corresponds better to the basic principle of rewarding in proportion to the work done and to increasing productivity.

Charging citizens more in proportion to their consumption contributes to local self-government and to an independent financial basis of municipalities for further construction and renewal of cities and settlements. In other words, new policies are being developed which will continue (and even increase) the help of the states and the Federation to the less developed regions and settlements for their faster economic progress. But subsidies will be avoided as much as possible. It is the purpose of these efforts to create an independent economic basis for each commune, to enable it to improve the standard of living of the inhabitants by their own efforts. Of course, this is one of the long-range goals, which cannot be achieved immediately but will gradually remove the existing disparity between towns and villages.

Nevertheless, this does not mean abandonment of the principle of solidarity among citizens in financing specific social services (like education, health and social insurance, social assistance, etc.).

It is necessary to emphasize that the significant successes achieved in Yugoslavia in economic and social fields should be understood in comparison with the situation before and immediately after the war. And even now the absolute level of economic and social development is still much lower than the level in highly developed countries. Efforts, time and peace, are necessary to attain the higher level. In the meantime, one could only hope for a relatively faster rate of economic and social progress and for complete elimination of disparity among social groups—that is, extreme poverty.

PHYSICAL FACTORS OF METROPOLITAN PLANNING

Each of the five Yugoslav metropolitan areas has unique characteristics, stemming from different natural conditions and historic factors. Thus, Zagreb and Ljubljana were built in the manner of the towns of central Europe in the Middle Ages. Skopje, on the contrary, was an oriental town. Its Europeanization began only between the two world wars. Sarajevo was also an oriental town, but was significantly influenced by central European building styles during the Austro-Hungarian administration. In Belgrade, the influence of the Turkish way of building disappeared long ago.

Although the inherited urban stocks were poor, and therefore presented serious difficulties for the life and work of the metropolitan population, they had, however, some advantages from the view point of city and regional planning. The fact that Yugoslav cities were not substantially faced with serious problems which usually appear in huge, spontaneously built cities of the industrial revolution has essentially facilitated their intensive building after World War II.

But, because of modest material possibilities, this relatively favourable situation has not been fully utilized in past years. With the rapid amelioration of the economic

conditions and with the perfection of planning methods, much better and bolder achievements may be expected in the future.

With the conditions of tremendous progress of technique in the world and of rapid economic and social development of new Yugoslavia, it is difficult to speak about a formed and completed concept of town and regional planning in Yugoslavia. This concept is evolving through the practical experience in solving actual problems and through long-term studies and plans. However, some elements of this concept are already well crystallized.

The avoidance of exaggerated concentration of buildings, people and their activities in massive cities is one of the elements of this concept. Starting from the circumstances in Yugoslavia, the following arguments in favour of this premise could be especially underlined:

(1) Functioning of giant cities is usually much more complicated and expensive than those of middle-sized and small towns;

(2) Living conditions are also less favourable in massive cities than in smaller ones—even for active people, and especially for children and old persons;

(3) The situation is very different from the first industrial revolution—when the technology in manufacturing demanded very great concentrations of manpower. Up-to-date technique in industries and particularly in transport makes it possible to increase the distances between the place of work and the place of living and to diminish the number of workers and other employed persons. In other words, modern technique may rationally co-ordinate and complete different human activities (both in economic, as in social and other fields) without an excessive concentration of productive means, houses, people and other factors of contemporary living;

(4) For developing countries, it is particularly important to use inexpensive methods in the solutions of housing and other social problems, to increase the economic investments and accelerate the whole economic and social progress. This tactic of socio-economic policy might be more easily applied by avoiding the building of large cities—at least at the beginning of the accelerated development of the country.

Neighbours' community represents a second essential element, which is already crystallized in the conception and practice of the construction and organization of residential areas—especially in the great cities. Neighbours' community is to a certain degree similar to neighbourhood unit in some western countries—because it is also a residential area which is constructed (or reconstructed) according to a plan. It involves both the dwellings and other urban facilities (schools, parks, children institutions and playgrounds, urban utilities, garages, shopping centres and other kinds of shops and miscellaneous services). The economic and other business activities should not disturb living, which remains the basic function.

But Yugoslav neighbours' community shows an essential difference because it is not only a physical element of the urban residential area, but also, and primarily, a

special organization of citizens who reside in it (a small "commune"). Through democratically elected central organs and different commissions the inhabitants of neighbours' communities are developing their own initiative to solve everyday problems of their life (arrangements of parks, playgrounds and children institutions, construction of shops, organization of different services for assistance to households, repairs of houses, etc., creation of people's restaurants and clubs, initiation of social action, etc.). Beside the contribution of citizens themselves, neighbours' communities are supported by the budget from the municipality or economic organizations. In such a way, neighbours' community is not only an important element of town planning, but a very important social cell, which completes the system of communal self-government, social management, workers' self-management and the entire socio-political system of direct democracy in Yugoslavia.

As social cells, neighbours' communities are widely active in spite of limited material possibilities. The principles of their interior organization and activities are regulated by a special law, promulgated in 1959.

As a town planning element, it is also generally carried out in the construction of new separated or attached residential areas. It is more difficult to implement this idea in existing built-up parts of cities because of obstacles one meets in renewal. In such cases the boundaries are sometimes artificial, but neighbours' communities are gradually being formed in the physical sense in those cases too.

De-concentration of the functions of city centres and their equalization with suburbs represents an accepted principle. Naturally, this process must last a long time. There are many examples of planned construction of new plazas, local centres, cultural and administrative institutions, and other elements formerly in the central business districts. Near Belgrade on the left bank of the river Sava, which not long ago was marshy and exposed to inundation, "New Belgrade", which is planned for 300,000 inhabitants, will accommodate federal institutions and big educational and cultural facilities. Building "New Belgrade" will take, at least, two decades. It is co-ordinated with major renewal of the railway networks and a series of other large projects of the entire city (construction of a port on the Danube, tracing a highway through the city, new airports, renewal of city transport, etc.). A number of big projects have been completed.

Less has been done in the planned construction of satellite residential towns around metropolitan areas. But recently, a more intensive approach to this task has been started, particularly to canalize the construction of small houses of a modest standard in these localities. However, examples of satellite residential areas exist, especially around Sarajevo. It is expected that this form of building will expand in the future.

ADMINISTRATIVE FACTORS OF METROPOLITAN PLANNING

One of the essential characteristics of the social system in Yugoslavia is the direct participation of citizens in the

solution of all social problems. In this sense, the commune represents the basic political and territorial unit, with a very large independence in decision making, including town planning and housing. The whole financing system is arranged for financial autonomy of the municipality.

The average commune in rural areas usually comprises an urban or industrial centre with nearby villages. The county involves a number of communes, representing a kind of association of communes. The activities of counties are co-ordinated by republic organs, and through these by federal organs. In small localities, situated outside the centre of the commune, are local committees which are branches of the municipality, and are very similar to neighbours' communities.

Metropolitan areas themselves are divided into a number of municipalities whose activities, together with communes near the city, are co-ordinated by the county. The county, in practice, performs the role of city administration. The largest cities have a special body, the City council, as co-ordinating organ for urban municipalities. The county co-ordinates the activity of this body and of the communes outside the city area. For instance, Belgrade has ten municipalities in the narrower region of the city, with 582,000 people (according to the census in 1958) and seven municipalities in the larger city region with 128,000 people. In the whole county there are 710,000 (in a territory of 2,086 km²). The smallest urban municipality has 17,000, the largest 92,000 people. Meanwhile, in the larger city region, the number of persons in different municipalities vary from 9,000 to 40,000.

The partition of great cities into municipalities is very significant because it facilitates direct participation of citizens in solving their problems. The co-ordination through the county is also very important. Therefore, depending on the kind of activity, prevailing responsibility is entrusted upon the municipality or the county to ensure direct participation of the citizens in municipal life. This is important to secure a rational co-ordination of their activity for a planned development of the whole metropolitan area.

For this purpose, the "Conference of Electors" was established. These meetings, composed of citizens with electoral rights, are organized from time to time to discuss different questions and make proposals. These proposals are submitted to the plenary session of municipality or county's people committee.

In the municipality, as well as in the county, the highest authority lies with the plenary session of people's elected committee. The People's Committee transmits their proposals to different boards, composed of the councillors of the People's Committee and representatives of interested organizations, and experts, who are appointed by the People's Committee. Among others, there are boards for housing, communal affairs, town planning, education, etc. In Belgrade, there were sixteen such boards, with 221 appointed members (in fall 1957) in the county and 176 different boards involving 1,731 members in the municipalities. In the People's Com-

mittees themselves 200 were elected councillors in the county, and 1,535 in the municipalities.

Executive operations, in the framework of Federal and State laws and the decisions of the People's Committee and its boards, are performed by employees of the municipal and county administration. They are grouped in secretariats (e.g., Secretariat for Communal Affairs, Secretariat for Housing, etc.). For particular services, such as town and regional planning, there are also independent institutes for research and elaboration of reports and other documents. Thus, in Belgrade and other large cities, there is an Institute for Town Planning which collaborates with experts from the municipal administration to prepare master plans of the city and its metropolitan region. Such plans are submitted for approval to the Board for Town Planning, and eventually, in the case of a master plan, to the plenary session of County People's Committee, as well.

When the railway network and other significant questions are reviewed, town planning institutes co-ordinate their work with those of state agencies, or directly with the organs of other interested counties. Otherwise, state agencies are not directly responsible in the fields of town planning, housing and communal affairs, except in the enactment of enabling legislation and other regulations.

The role of agencies for economic planning should be particularly underlined. They exist in big cities within the county People's Committee, but in the form of independent institutions. The county Planning Institutes elaborate annual five-year and twenty-year plans in collaboration with state and federal institutes for economic planning. Like budgets, these plans are specific temporary laws, giving general directions to the enterprises, elected and other bodies, and to all citizens on the direction of economic and social development, and establish financial programmes and other instruments which influence development. They are more general at the federal and state level, more precise at the county and municipal level.

Physical planning is facilitated by economic planning because a significant part of the studies and programmes, as the basis for town planning and designing, are elaborated in long-term and annual plans. There are sometimes difficulties in co-ordinating between economic and physical planning, because of different methods applied. But, this co-ordination is gradually being ensured. Economic planning is being strengthened with physical planning, by taking into account physical aspects of development, especially more precise economic planning such as that for investments.

A significant phase of co-ordinating economic and physical planning is now being carried out by elaborating comprehensive programmes for the construction or renewal of neighbours' communities, and by the better co-ordination of activities of housing funds, communal and other economic enterprises, social institutions and other interested bodies. These programmes integrate house building, urban utilities, shops, schools and industrial plants.

Decentralized government and management have also contributed to the decentralized urbanization. They are possibilities for economic and social development for each commune. Moreover, they receive active support from the state and federal organs—through credits for economic development and through subsidies to underdeveloped communes to secure elementary education, administrative, health, social services, etc.

CONCLUSION

Broadly speaking, town and country planning attempts to integrate human activities. It influences the whole development of a society, physically and morally.

The direct initiative of citizens in approaching and solving different problems has been encouraged as much as possible. This encouragement has been realized through a system of direct democracy. In addition to the direct material benefits from these activities of the workers has been their consciousness of the necessity to co-ordinate and to unify their efforts, and when necessary, to put common interest above private privilege.

From the very beginning of new socialistic Yugoslavia the policy of balanced economic and social development has been accepted. Therefore, even under very difficult circumstances, significant measures have been undertaken to spread economic and social progress, even outside of the metropolitan areas. Better economic and social conditions are ensuring balanced development, both in the sense of balanced economic and social progress, and of balanced development of metropolitan areas and other settlements.

Some conclusions may be drawn on the basis of Yugoslav experience:

- (1) Intervention in the very cause of problems and their prevention is much more efficient for successful metropolitan planning (particularly in fast developing countries) than curative measures after the problems have been created;
- (2) Problems of metropolitan areas can be solved only through balanced measures in the economic and social fields, regionally and in the whole country.

METROPOLITAN PLANNING IN INDIA*

G. MUKHARJI

The concept of planning as a deliberate and organized process is still anathema to many; programmes emerging from plans are considered irksome or impracticable and are resented and opposed as restrictions on individual freedom. And yet, each succeeding generation wonders why the preceding one lacked forethought and was so callously unaware of the obvious. It is an old story that has haunted the human race through the ages.

The position is still acute for physical plans of towns and cities, as problems are not clearly set out, an over-all perspective is lacking, interests of individuals appear to clash with those of groups and of different groups with the urban community as a whole. Still it cannot be denied that urban concentrations are organisms in themselves and not merely agglomerations of small groups unconcerned with one another. Whatever the genesis, the ultimate shape leaves no doubt about its wholeness. It develops an entity of its own. Like a twig, it throws out roots after having been planted in the ground. The mature plant is certainly neither the original twig nor a collection of twigs. That is to say, however deliberate the manner in which a new city or town is established or created, it tends to develop into an organism. It will develop a personality of its own.

For instance, Chandigarh was built on virgin soil from scratch and all the modern techniques of planning were introduced into it. But most certainly in the years to come it will gain a character perhaps fundamentally different from the one given to it at its creation. The same thing happened to other capitals like Washington, Ottawa and Canberra. Mere artificial introduction of planning principles, therefore, does not take away from the character and personality of a city which breaks through the strictest regulations to hold it. It only emphasizes that urban planning cannot afford to be mechanistic nor be conceived without continuity, flexibility and adaptation.

It is necessary to mention this because the human being who is the central figure in this scene tends to get ignored in a gigantic machine to the utter destruction of his humanity. Vast concentrations of population require a high degree of environmental regulation, and impose restrictions of various sorts in an effort to get the best out of it from the physical point of view. The emotional requirements either get lost or cannot be catered to.

Urban life causes numerous tensions and inhibitions, and efficiency of output in economic terms appears to occupy the entire attention. With great opportunities to plan well ahead of development, one can still, in the Indian situation, help to save the personality of man and offer him a pattern which makes the entire process of living satisfying.

In India, as it happens, the position is quite favourable for city planning. The governmental, administrative and organizational machinery has not only been enlarged but has now become oriented to the discipline and conduct that successful plan-implementation calls for. The people of the country also are favourably disposed towards planning. This climate is due to very good results achieved by national planning.

Though good results have been achieved, national planning remains somewhat incomplete because planning has yet to percolate down to the regional and local level. Naturally, therefore, the concept of planning has to be carried forward from national economic policy-making to more comprehensive planning; that is, to find out how human beings are going to live in a particular locality, city or region which will develop rapidly on account of the further strengthening of industry. The increasing magnitude of this problem can be appreciated when it is borne in mind that urbanization in India has taken place not so much as a result of industrialization but has preceded it.

The results of national plans depend to a great extent on the manner in which cities that spring up are planned within their regions. It would not be wrong to say that until this is done the national plans may in many places produce rather unwanted results. The Planning Commission has itself emphasized the need of urban and regional planning. The Second Five-Year Plan stated:

“With the framework of plans drawn up . . . for different sectors of development . . . it is also necessary to work out physical and economic plans based upon the study of urban-rural regions, viewing each region as an area for integrated local planning. The regional planning approach is required especially for large and growing towns and for river valley areas which are being developed through new irrigation and power projects. The aim ultimately must be to evolve balanced urban-rural regions which would . . . achieve development at reasonable social and economic cost.”

Acceptance of planning is not enough, however. Laws

* Background Paper No. 4 prepared for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

are necessary to establish plan organization and to carry out plans after they are prepared. The position here varies from state to state. In 1961 there were fifteen states in India. They have their own legislatures. Urban and regional planning falls within their legislative jurisdiction. Delhi, which has an area of about 580 square miles, is a centrally administered territory having no legislature of its own. Laws for it are enacted by the Union Parliament. A similar condition exists in Himachal Pradesh in the north and in Tripura and Manipur in the east.

Most states in India have town planning acts, and the other states are taking active measures to enact them. Even in those states where proper town planning acts do not exist, there is other legislation under which city planning can be undertaken. By and large, some enabling legislation does exist under which plans can be prepared for almost all cities of any significance, except the largest City of Calcutta. In Delhi, a draft master plan was published in 1960 under the Delhi Development Act. This Act makes it obligatory for the Delhi Development Authority to prepare a master plan and zonal development plans for the zones into which Delhi may be divided for purpose of planning and development.

METROPOLITAN GROWTH

Even though this paper deals primarily with the problem faced by the four largest metropolitan cities in India—Calcutta, Bombay, Delhi and Madras—it may be worthwhile to review the factors responsible for the increasing pace of urbanization for the ten largest cities. Table 1 reveals that there has been an enormous and unprecedented increase of population after 1931.

While all cities registered large increases some changed places in the hierarchy. Even though Calcutta, Bombay and Madras have retained their original positions during the last fifty years, Delhi has gained a much higher place with each passing decade. During 1931-1941, a greater percentage of increase was registered in industrial cities like Ahmedabad and Kanpur; but in the last decade, cities with strong administrative and commercial components registered comparatively higher rates of increase. In fact, much of this can be ascribed to the developments

that took place after Independence. The picture of Delhi and that of Calcutta may be said to be somewhat different from that of Madras and Bombay, as Delhi and Calcutta were greatly affected by the partition when a large number of displaced persons migrated there.

It is relevant to consider the factors which induced such a large-scale growth of population. There exists massive under-employment in the rural areas. Employment opportunities for the rural population, outside of farming, is extremely limited. Agriculture cannot possibly absorb an increasing number of new entrants to the labour force. The result is that a large number of young and relatively literate people from the rural areas migrate to towns and cities. The brotherhood (*beradri*) element in this migrant population induces more and more people to come into the cities in the hope of employment. Meanwhile, the cities continue to grow and their problems increase as the average standards go down. Yet the over-all picture is one of apparent growth and activity.

Of the four metropolises of India, Delhi alone has a long historic continuity of occupancy. The other three cities were founded by the East India Company and developed only in the past two hundred years, giving special emphasis to western culture and methods of doing business. Delhi, in addition to its rich history in the life of India over the centuries, was the recipient of considerable modernization, both before and after 1912, and it now represents a balance of activities and traditions which are in tune with the whole problem of advancing India.

Calcutta was the capital of the country for many years during British rule and was given up for Delhi only in the first quarter of the present century.¹ It grew very

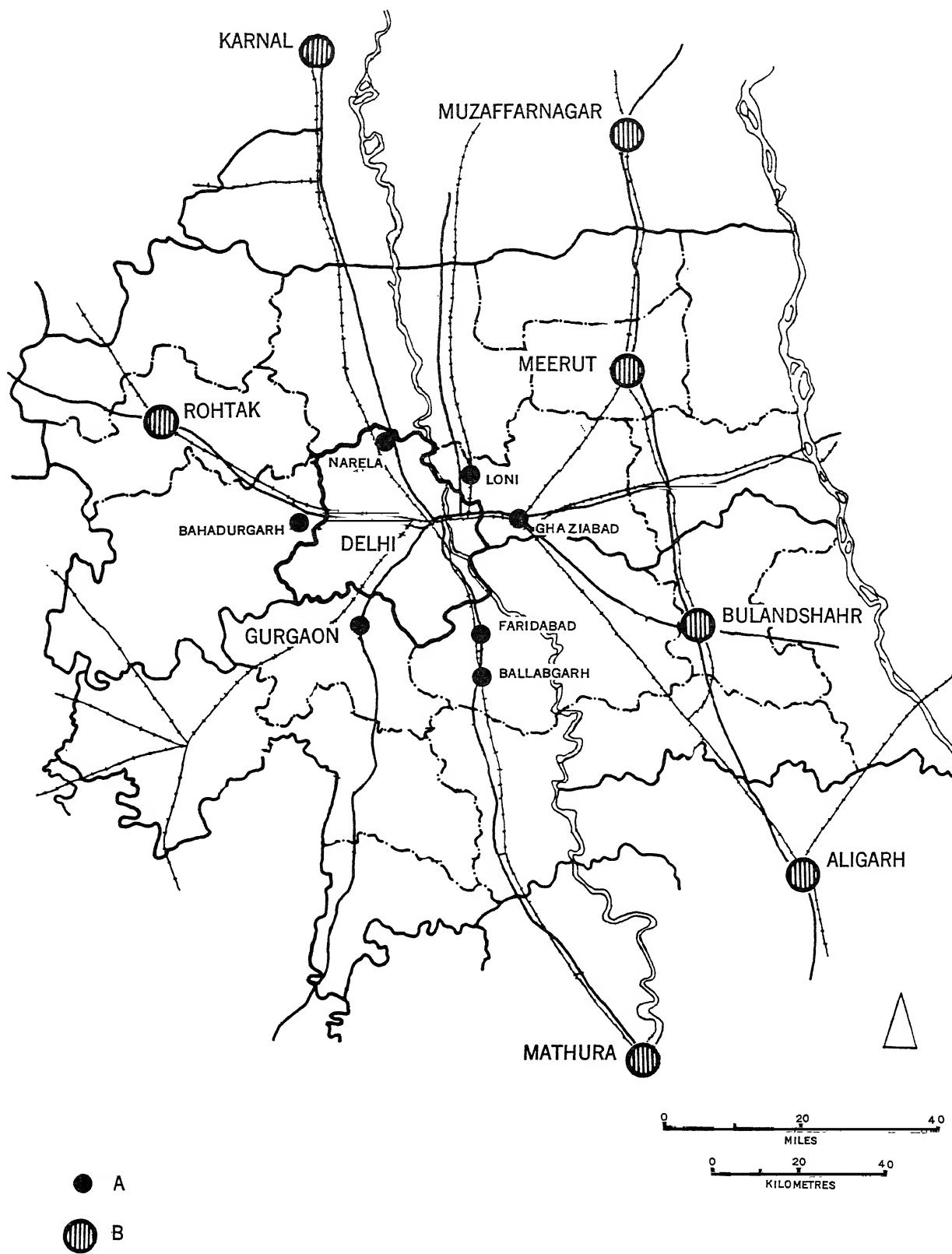
¹ Originally a cluster of villages, the mention of whose name was found in the old Bengali literature as early as the end of the sixteenth century, the origin of this city might be traced, symbolically, to August 24 1660, when Job Charnoc, an agent of the East India Company, decided to set up a factory at Sootalooty, in preference to the Nawab's invitation to settle further downstream at Hoogli. Thus to quote Kipling: "from this mid-day halt of the meek trader grew up a city". The villages were formally purchased by the Company on November 10 1689, at a cost of Rs.1,300. Tentative estimates placed the total population of the city at about 10,000 in 1701 and by the end of the 18th century, the total population was estimated to have risen to 140,000. In 1850, a census placed the total population of the city at 413,182. (Kathleen Blechynden — *Calcutta: Past and Present*.)

Table 1. Growth of population in ten large cities, 1901-1951

Population in thousands. Percentage variation shown in brackets.

City	1901	1931	Growth	1941	Growth	1951	Growth
Calcutta	1,475	2,076	(40.7)	3,534	(70.2)	4,578	(29.5)
Bombay	847	1,303	(53.8)	1,695	(30.1)	2,839	(67.5)
Madras	509	647	(27.1)	777	(20.1)	1,416	(82.2)
Delhi	209	439	(110.0)	660	(50.3)	1,384	(109.7)
Hyderabad	448	467	(4.2)	739	(58.3)	1,085	(46.8)
Ahmedabad	186	314	(68.8)	595	(89.5)	794	(33.4)
Bangalore	161	308	(91.3)	407	(32.1)	779	(91.4)
Kanpur	203	244	(20.2)	487	(99.6)	705	(44.8)
Poona	174	266	(52.9)	345	(29.7)	589	(70.7)
Lucknow	256	275	(7.4)	387	(40.7)	497	(28.4)

SOURCE: Government of India, Census of India (1951) — Volume II-A.



KEY: A: ring towns; B: district headquarters

New Delhi national capital region

rapidly into the most important industrial and commercial centre. In 1901 the population was 920,300 and 1951 it was 2,550,000. Meanwhile, the population of the metropolitan area rose from 1,470,000 in 1901 to 4,580,000 in 1951.

In the fifteenth century, Bombay consisted of a few islands which gradually passed into the possession of the Portuguese. The original seven islands were reclaimed and consolidated to become the present island of Bombay. In the latter half of the fifteenth century, these islands were transferred to King Charles II of England. With the rise of the British power in India, Bombay became the most important outlet for Indian goods and raw materials to Europe and the West. However, its population during the three centuries grew slowly compared to the last fifty years. In 1901 it was under 850,000, but during the first fifty years of this century increased more than three and a half times.

The Madras metropolitan area seems to have had an ancient history as demonstrated by the temples of Mahabalipuram about twenty miles south on the coast. The present city of Madras, however, came into existence in the middle of the fifteenth century when the East India Company obtained a grant from the local *Nayak* empowering the establishment of a factory and a fort. In 1901, Madras had a population of about half a million but by the 1951 census it had grown to nearly 1.5 million.

Delhi is a very ancient city. Relatively few facts are known about its origin and those are somewhat mixed with legend. There are traces of several Delhis, at least seven of them. It would suffice to say that modern Delhi was built by the Emperor Shahjahan in the seventeenth century. It is said that the city of Shahjahanabad was then planned for a comparatively small population of 60,000. When the British established their capital at Delhi early in the twentieth century they brought out architects and planners from England to plan the new capital, which was called New Delhi. It is still called New Delhi and the city of Shahjahan with its extensions is known as Old Delhi.

The main problem of planning for Indian cities stems from the very low *per capita* income. The general dimensions of this problem become evident by reviewing table 2.

It is obvious that a large part of the urban population can hardly sustain itself at a subsistence level, that literacy

and training are major impediments, and that housing is desperately short (and without a prospect for early improvement). All problems of urban living emerge from or are aggravated by economic factors. It is not merely a question of a change of habits; it is a matter of having the capacity to pay for a changed environment.

PLANNING FOR DELHI

A good illustration of the multiplicity of the problems and the manner in which these are proposed to be solved is evident in the case of Delhi, for which a draft master plan has been developed by the Delhi Development Authority. It is a useful prototype in so far as the problems faced by the other metropolitan cities in India are generally similar.

The population of urban Delhi prior to independence (1947) was estimated at about 660,000. It was around 1.4 million in 1951. If the present rate of growth continues, the population in 1981 would probably be around five million. A summary of the population projections for Delhi and India is given in table 3.

The Union Territory of Delhi is only about 580 square miles in area, but exerts its influence over a vast area in adjoining states in employment, trade and commerce. During the plan preparation it became obvious that the growth of Delhi had to be studied in relation to the metropolitan area and, beyond, in the national capital region. The metropolitan area was delineated after careful study and comprises an area of about 800 square miles and included certain parts of the States of Uttar Pradesh and Punjab.

For a growing and important city like Delhi, further studies delineated the national capital region. This is the area which is commanded by Delhi in various ways and should be planned in an integrated manner for the distribution of population, new locations for employment in industry, drainage, and transport and communications. However, only brief studies of the potential of the region from the planning point of view were carried out. It is hoped that more intensive studies will be done in due course. However, the studies did emphasize that it was not possible to consider the City of Delhi in isolation from the region. The regional concept offers perhaps the most ready solution for controlling the growth of Delhi, which seems imperative if city life is to be safeguarded.

Table 2. Selected housing and socio-economic data

	Housing deficit (in thousands)			Households living in one room (percentage)	Households with monthly income less than Rs. 100 (percentage)	Literates to total population (percentage)
	1951	1961	1971			
1. Greater Calcutta	425	577	781	57.6	35.2	32.1
2. Great Bombay	220	380	640	77.6	19.1	48.0
3. Madras	229	363	574	65.4	73.2	35.4
4. Delhi	069	147	273	68.9	43.5	41.0

SOURCES: 1. Sayed Shafi, "An estimate of the relative housing deficit in selected cities in India," paper contributed to Annual Town and Country Seminar, Bombay, 1959; 2. Government of India, Planning Commission, *City Survey Reports*, New Delhi.

Table 3. Projected population of Delhi, national capital region and India

Region	Population in millions			
	1951	1961	1971	1981
India	360.00	450.00	530.00	600.00
Urban India	60.00	90.00	155.00	210.00
National capital region	5.40	7.50	10.00	12.56
Delhi metropolitan area	1.96	3.20	4.70	6.00
Delhi territory	1.74	2.58	3.78	5.50
Urban Delhi	1.44	2.20	3.31	5.00

SOURCES: 1. Delhi Development Authority, *Draft Master Plan for Delhi*. 2. Ansley J. Coale and Edgar M. Hoover, *Population Growth and Economic Development in Low-Income Countries* (Princeton, Princeton University Press, 1958).

As stated above, attention was paid to the metropolitan area of about 800 square miles and it was felt that immediate action was necessary within this area to regulate the growth of the metropolis. Among the more important townships in this area are Ghaziabad and Loni in Uttar Pradesh at a distance of thirteen miles and eleven miles respectively and Faridabad, Ballabgarh, Gurgaon and Bahadurgarh in Punjab at distance of eighteen, twenty, sixteen and twenty miles respectively. Narela is the only township within the Union Territory of Delhi and is about twenty miles. It is true that for satellite development these towns are rather too near. On the other hand, as they have formed themselves into active nuclei, it would have been unrealistic to bypass them and suggest new locations at greater distances which might have been theoretically better. Moreover, many of these towns offer positive opportunities for development: land costs here are comparatively low; their planning standards could be set at lower levels to reduce the cost of development to an appreciable extent.

After conducting detailed surveys of land use and distribution of population, it was suggested that priority of attention should be paid to the development of these ring towns to help deflect at least a portion of the population which would otherwise be attracted to Delhi. Quite a percentage of this migrant population could be held back in these ring towns, thereby preventing the inflation of the population of Delhi. A ring of towns within this short distance of Delhi cannot offer the final solution and further studies must indicate the locations at which real counter-magnets should be developed within the national capital region of about 4,500 square miles. Obviously these ring towns would not grow on their own or in the manner in which one would like them to grow unless the economic base of these towns is considerably strengthened by planned industrial development and also by encouraging the establishment of government offices there.

The practical possibilities of these measures have been carefully examined and even though there will be certain types of difficulties in the initial period, it is possible to implement some of these proposals immediately. The next step is the preparation of detailed master plans for these towns in relation to Delhi itself. This means that the industrial component in each ring town has to be worked out in relation to the manufacturing work force

of Delhi itself. Even the selection of the kind of industries that will go into a particular area or township will have to be carefully made, both of the physical attributes of the industry and its economic potential.

The Government of India has already accepted in principle that no large-scale industry will be permitted within the urban complex of Delhi and the larger industries will have to find locations for themselves in the outlying areas or in the ring towns. This regulation thereby stimulates the ring towns' growth. Decentralization of offices would also help to provide that socio-economic leaven which is so valuable for new communities. Of course, the same degree of control over development (but not the same planning standards) in land-use regulations, zoning and building by-laws would be required for the ring towns as for Delhi itself. The distribution of proposed industrial and central Government employment in the ring towns is shown in table 4.

The main conception is that Delhi will continue to be the major government centre and will accommodate that amount of industrial employment as will give it a fairly sound economic base. Delhi will also continue to be the main financial, business, commercial and distribution centre for the whole region. Apart from the fact that it would not be desirable to convert Delhi into an industrial city, the introduction of large industries within Delhi would create special problems of air pollution, waste disposal, traffic congestion, etc. It will also directly make the population growth wholly unmanageable.

It may be argued that whereas to protect the metropolis with a ring of towns situated at theoretically good locations may be feasible, industry itself may not find ideal industrial siting at these places. This would indeed be a valid position in a completely *laissez faire* economy. But in India national plans approved by Parliament guide all development. If a part of the country is backward, it cannot be left in that state. The objective of social welfare cannot be achieved if each industrial unit operated only within the framework of its own benefits. Apart from the necessary dispersal of industry in the private sector, there is a large and growing public sector over which the State has complete control and locations can be determined in a regional context to help uplift underdeveloped areas or to bolster the economy of other areas which need assistance.

Table 4. Distribution of population and future working force in industry and central government in Delhi metropolitan area

City or area	Population 1951 (in thousands)	Anticipated population in 1981 (in thousands)	Proposed distribution of employment in 1981			
			Industry		Government	
			Thousands	Percentage	Thousands	Percentage
<i>Delhi State</i>	1,744	4,943	433	20	270	14
Urban (excluding Narela)	1,437	4,593	418	24	270	15
Rural	307	350	15	11	—	—
<i>Ring towns</i>	125	842	114	38	55	19
Narela	10	357	10	40	10	40
Ghaziabad	44	71	50	40	20	16
Loni	4	23	2	25	5	62
Faridabad	31	285	40	40	15	15
Ballabgarh	6	29	3	30	—	—
Gurgaon	19	48	5	30	5	30
Bahadurgarh	11	29	4	40	—	—
<i>Villages</i> (excluding Delhi State)	100	135	8	10.8	—	—
GRAND TOTAL	1,969	5,920	555	25	325	14

The whole purpose of planning on a nationwide basis is to ensure the economic development of the entire country and it is the over-all picture which must constantly be kept in view. It is in the nature of an economic aid and has to be undertaken. In the Indian situation implementation of such a scheme is comparatively easy and, what is more, socially and politically unavoidable. There may appear to be an element of indirect subsidy in this, but it would be both more honest politically and justified economically to subsidize in this form which is ultimately going to be productive than to administer palliatives periodically of an entirely short-term character or wholly inadequate in productive potential. The former will sooner or later produce stable conditions; the latter can only constitute a perpetual drain on national resources, besides being socially and politically untenable. This is of great importance in metropolitan planning in India and can be utilised to great advantage in delineating metropolitan growth in a rational manner without impeding either industrial development or urban growth. Of course, the method should not be pressed to an

extreme. Certain locations will naturally be determined by raw materials and other acknowledged pre-requisites for locating industry.

This special feature gives strength to planning in India. Distributing the work force can be made on deliberate lines. In planning for the Delhi metropolitan area, the allocation of the projected work force has been made to the best advantage and the proposals for the work force are presented in table 5.

These estimates of the prospective structure of the working force in 1971 and 1981 are based on certain hypothesis and would be subject to measures of public policy. During the last decade there has been considerable expansion in Delhi of medium-size and small engineering concerns and these are bound to grow further. Such enterprises employ relatively large numbers of people. Still, 25 per cent of the working force in industry is by no means high and will not give an industrial character to Delhi.

The statistics quoted above help in appreciating the

Table 5. Projections of work force of Delhi State by sectors, 1951-1981

Sectors	Working force							
	1951		1961		1971		1981	
	Thousands	Percentage	Thousands	Percentage	Thousands	Percentage	Thousands	Percentage
Agriculture	65	10.2	75	8.1	80	6.1	100	4.8
Manufacturing and mining	117	18.4	186	20.0	290	22.0	525	25.0
Construction	62	9.8	85	9.1	120	9.1	210	10.1
Transport and communication	36	5.7	55	5.9	90	6.8	150	7.2
Commerce and finance	125	19.6	190	20.4	265	20.1	420	20.1
Professions and liberal arts	33	5.1	55	5.9	90	6.8	170	8.1
Public services	107	16.9	160	17.2	210	15.9	310	14.7
Public utilities	8	1.3	10	1.1	15	1.1	20	1.0
Other services	82	13.0	114	12.3	160	12.0	185	9.0
TOTAL	635	100.0	930	100.0	1,320	100.0	2,090	100.0

SOURCE: Delhi Development Authority, "Economy of Delhi", *Draft Master Plan for Delhi*, ch. IV.

problem of planning and working out planning standards. These standards are based on careful studies and accepted norms, with such variations as the local conditions demand. Based on these standards, the draft plan envisaged the creation of eight planning divisions, or districts, each based on physical features, historic growth, character of development, intensity of land use and the circulation pattern. The idea in making these divisions is to have more or less self-contained units for purposes of living, employment and recreation. The decentralization of the places of employment and their proper relationship with residential areas will obviate exceptionally costly new transport lines.

The pattern of self-contained planning divisions has been conceived from the bottom upwards. The lowest tier will be the housing cluster containing 500 to 1,000 population. These clusters roughly correspond to the traditional *mohallas* or *Kuchas* in the old city of Delhi and, in fact, are found in rudimentary form in almost all the Indian cities and towns. It will have as its nucleus a nursery school with a tot lot. Four to eight housing clusters grouped together around a primary school and convenience stores with a small park will form a basic residential unit containing a population of between 4,000 to 5,000 people.

However, for purposes of a wider range of community activities, the residential planning area of 12,000 to 15,000 population will have for its focal point, a high school and a community hall with adequate neighbourhood shopping for day-to-day needs. For the provision of additional facilities such as a health centre, library, cinema, better shopping and recreation centres, two residential planning areas have been grouped to form a community. Several of these communities have been grouped to form a district. The district centre will be a composite retail shopping centre with commercial and service uses. In some cases it will also have a small area for government offices. Generally, within each district centre, a work centre has been provided to offer employment opportunities to a large number of people. Small-scale and cottage industries in flatted factories will allow an intensive use of land (at the rate of about 200 persons per acre). The district will have a population ranging from 150,000 to 250,000.

The basic idea behind this pattern is the building of a community out of a collection of people. This is so very important from the emotional point of view and so often missing in urban situations and should have special attention at an early time.

Traffic bottle-necks are perhaps one of the major problems which have attracted a great deal of attention from transport engineers, planners, administrators and law enforcement authorities. In the draft master plan for Delhi, an attempt has been made to rationalize the origin and destination of traffic by a more logical arrangement of the places of work and the places of residence. The plan seeks to locate the major work areas (manufacturing industries, central government offices, district shopping centres, university campuses) at places which will help create a balanced relationship between work and housing.

The problem of urban sprawl is yet another phenomenon which is more or less common in many countries of the world. However, in the metropolitan cities of India, the peripheral development is of such a low standard due to general lack of services that often it has been called the sprawl of slums. To safeguard against premature encroachment on peripheral lands, to ensure a clear distinction between countryside and city, and to preserve land in agriculture from undersirable urban growth, an inviolable green belt about one mile wide has been proposed all around the compact urban limits of Delhi. No use except farming will be permitted in this area.

Considerable stress was put on planned development of the rural areas around the metropolis. If development in these surrounding areas is not controlled, urban sprawl into the countryside will continue to create the very conditions that are causing worry within the city. The Union Territory of Delhi has about 300 villages. About fifty of these are likely to be absorbed by 1981. It has been proposed that the rest should be provided with at least the minimum amenities and community facilities: water, approach-roads, schools, dispensaries and shopping. The villages have been grouped into convenient and viable clusters and the needs of each cluster have been carefully worked out on the basis of population, existing facilities and trends. In addition, certain villages have been recommended for development as urban villages, just outside the urbanizable limits, to accommodate certain types of trades and industries of a rural character now being carried on within the city, like potters, weavers, tanners, etc.

A further need is to prevent industry or housing from moving into the rural areas in a haphazard manner. Proposals visualise preventing building within certain prescribed distances of major roads and anywhere except on approved farms or in existing villages. By these means the natural landscape of the countryside will be preserved.

For land use, roughly 120,000 acres (including existing development) will form the compact urbanizable limits by 1981, compared to about 42,500 acres at present. The proposed break-down is shown below:

Table 6. Proposed land uses in Delhi metropolitan area

Land use	Area in acres	Per cent
1. Residential	48,638	40.2
2. Commercial	1,615	1.3
3. Industrial	8,109	6.7
4. Governmental	1,149	0.9
5. Defence	8,638	7.1
6. Recreational	27,342	22.6
7. Public and semi-public use	9,282	7.7
8. Railways	2,251	1.9
9. Airport and transport facilities ^a	5,175	4.3
10. Agricultural	8,805	7.3
TOTAL	121,004	100.0

SOURCE: Delhi Development Authority, *Draft Master Plan for Delhi*.
^a Major roads constitute about 7,000 acres, but are not tabulated separately.

Roughly 40 per cent of the land has been proposed for residential use. The residential area itself has been planned for densities ranging from a low of fifty persons (eight to ten dwellings) per acre to 250 persons (forty to fifty dwellings) per acre. However, a special density up to 300 persons per acre has been indicated in the walled city of Shahjahanabad because, in spite of the best planning efforts, it will be an extremely difficult human problem to displace hundreds of thousands of people from their traditional abodes.

Acreage for government and commerce is roughly equal to one percent of the land in each use. The plan envisages the development of a number of government employment centres to help rationalize distribution of governmental housing and places of work. Industrial acreage would form roughly 6.7 per cent of the total land uses. Of course, organized industrial districts will accommodate light and medium manufacturing essential for serving the population of the capital, as well as contributing to the city's primary functions. In addition, manufacturing has been proposed in flatted factories and work centres close to the residential areas in almost every district centre. Such centres will provide intensive use of land for small-scale and cottage industries. This will also supplement family budgets in the low-income households by providing employment to women near their residences.

RESIDUAL PROBLEMS

In Delhi, as in Bombay, Calcutta and Madras, the housing shortage is appalling and, in spite of increasing efforts in the private and public sectors, the housing deficit and the problem of derelict housing are increasing perhaps at a rate greater than the growth of population. The reason is two-fold: abnormal increase in population and lack of investment. Houses constructed by private capital have been mainly for high income groups where the return has been more than satisfactory.² The building of tenements for slum dwellers has been confined to public authorities and the achievements have been very limited. Investment in manufacturing holds prospects of much better returns. The gap is thus widening rapidly and calls for bold measures.

Subsidized housing and the location of housing pose an important problem. If subsidized housing is provided on the outskirts, where land is comparatively cheap, the distance to work is forbidding. In the central locations where slums now exist in all these cities, the land values are so high that the rents work out far beyond the paying capacity of the slum-dwellers, even on a subsidized basis.

A reference to the all-important question of land appears necessary at this stage. However good and efficient a physical plan may be, its implementation will be balked if land is not available in adequate quantities and at reasonable prices. A vicious circle is produced: as urban population increases, land values soar; poverty of the people prevents their purchase of land; and the revenues of the public authorities being meagre for the

same reason, even public purchase of land becomes extremely difficult.

The land Acquisition Act of 1894 provides for compulsory acquisition of land at market rates and allows a solatium. This Act is generally utilised these days but, high costs forbid large-scale acquisition in advance to meet future needs. There is a provision in the Delhi Development Act for compulsory acquisition of land whose compensation is to be equal to market value or, if it is less, "an amount equal to the sum total of market value of the land on the first day of October, 1955, on the basis of the use of the land on that date plus an amount equal to 25 per cent of the increase, if any, in the market value of the land during the period between the date of notice and an amount which represents cost of development, if any, carried out on the land during that period".³ The provisions of this Act have not yet been used. Another Act, the Slum Areas (Improvement and Clearance) Act of 1956, provides for acquisition of specified slum properties for clearance purposes and the amount of compensation payable is equal to sixty times the net average monthly income actually derived from such land during the period of five consecutive years immediately preceding the date of the publication of the notice.⁴ The rate of compensation under this Act is rather low. And this provision also has yet to be applied.

Of all four large cities, Delhi alone has had the overwhelming advantage of a large stock of government-owned land, acquired when New Delhi was built. These lands provided a great stand-by when large numbers of displaced persons came into the city in the wake of the partition of the country. The stock is now practically depleted and the Government of India has initiated acquisition on another 35,000 acres to help Delhi develop according to plan. The government of Uttar Pradesh has also initiated acquisition on about 36,000 acres of land in and around the proposed ring towns of Ghaziabad and Loni to carry out development visualized for the Delhi metropolitan area. Steps are being taken to acquire about 55,000 acres of land for the location of a new city close to Calcutta. It appears that large-scale acquisition of land places where the pressure is noticeable, or in areas where new projects are contemplated, is unavoidable, and is bound to pay dividends both from the social and financial points of view.

An aspect of the land policy which deserves careful consideration is a rational means of preserving for the public as much of the increase in land price as is practical. Increased land value is the direct result of the activities of the community and it would not be contrary to principles of social justice if these benefits accrue to the community rather than to the individual whose contribution towards the rise in value is very little. In the twentieth century and in the context of a social welfare society, feudal notions of right over land appear obsolete and anachronistic. A betterment levy will reflect itself on

² In Delhi such buildings often bring annual returns of 15 per cent to 20 per cent.

³ The Delhi Development Act, 1957, section 16.

⁴ The Slum Areas (Improvement and Clearance) Act, 1956, section 15.

rents which is bound to hit the poorer sections of the community and seems unwise. Some solution has got to be found not only for social equity itself but also to raise revenues for public provision of much-needed community facilities. The structure and operation of the property tax and other taxes may also have to be reconsidered in this context.

It is often assumed that the execution of plans is far too expensive. On the contrary, experience shows that planned development is in the long run considerably cheaper even in the narrow financial sense, not to speak of the social and psychological benefits of a good and healthy environment. In planless urban growth, congestion and slums overtake the city, traffic conditions get chaotic, sanitation becomes a casualty and needed capital improvements, services and facilities lag behind. The eradication of these evils and deficiencies at a subsequent date costs much more than their timely provision on the basis of foreseen requirements.

Delhi provides a good example. With the rapid growth of population during the last decade, Delhi began to sprawl in all directions, and new settlements grew up without utilities and community facilities. Unauthorized construction mushroomed. The burden of undoing all that or of substantially improving conditions presents a real financial and administrative conundrum. To cite a few examples: the cost of providing humble tenements to re-house about 40,000 squatter families in Delhi, is estimated to be about Rs. 50 million. Yet Rs. 65 million are needed to clear just a fraction of the city's existing slums and to re-house these slum dwellers in very modest dwellings or rehabilitate them in urban villages.

Another side of the problem is seen in education where there is a backlog of about 438 primary and fifty-nine higher secondary schools. In medical services, there may be a backlog of about 105 health centres and 7,350 beds in hospitals may exist by 1966. The total backlog in education and health facilities alone is estimated to cost over Rs. 200 million.⁵

It is by no means possible for the public authorities to mobilize the financial resources that such a colossal programme calls for. But it would have been more economic to provide funds on a rational basis if urban development had followed a predetermined pattern. More

effective use of the available financial, technical and administrative resources could have been secured merely by co-ordinating the development work of the different public authorities of urban Delhi.

Metropolitan planning in India will continue to have to face a fluid condition on account of the economic condition of the people. Rural folk do not like to move into towns voluntarily; they do so for a better income. In the process they suffer considerable psychological and environmental tensions. For their integration into a new society, it is essential to undertake community development on a fairly extensive scale simultaneously with physical planning for cities. This will have to be as basic a part of the over-all programme as national economic development and will naturally have to be concurrently linked up with a nation-wide programme for controlling the growth of population. Family planning programmes are being pursued energetically in India and will have a very important bearing on the whole question of national and metropolitan planning.

While the technical aspects of planning are of vital importance, the existence of efficient administrative machinery is equally important. It will enable plans to be implemented in a properly phased and co-ordinated manner. Where a region is completely within the jurisdiction of a state government, the problem is obviously easy. Where the region extends into several political jurisdictions, the problem gets complicated, as in the case of Delhi. Adjustments have to be made not only with the various governments concerned but also with the local authorities. For the development of the Delhi metropolitan area, which covers three political jurisdictions, co-ordination and consultation at all stages are necessary for the fruition of plans. This co-ordination has already been achieved at the technical plan-making level. Achievement at the administrative and political levels will involve the active participation of the central and state governments and the local bodies concerned.

Regional plans transcending political jurisdictions, as in the case of the Delhi metropolitan area and the national capital region, call for vision and imagination, apart from day-to-day co-ordination and understanding. If the purpose of planning is clear and if the objectives are understood, smooth and active collaboration is likely to ensue. Laws do not create conduct: they merely regulate them, and too much dependence upon legislation to compel co-operation may not produce the results one looks for.

⁵ Government of India, Ministry of Health, *Town Planning Organization*, "Financial aspects of the draft master plan — programme (1961-1966)", mimeographed document dated September 27, 1960.

THE SCOPE AND PURPOSE OF METROPOLITAN PLANNING AND DEVELOPMENT IN THE UNITED STATES*

ROBERT C. WEAVER

The United States is now placing increasing emphasis upon metropolitan planning, particularly in programmes supported by federal aid. Our Congress enacted major legislation for housing and urban development in 1961 which not only extended and amplified existing programmes in housing, urban renewal and public facilities but broke new ground in providing federal grants or loans to our localities for open space and mass transportation. Aids under these programmes are available only to localities in metropolitan areas which are engaging in planning. The Federal Government is now also authorized to extend increased financial assistance for the preparation of comprehensive plans.

City or community planning in the United States is a responsibility of the state or locality, not of the national Government. Typically, planning is done by technicians who serve under officially-appointed citizen boards or in some cases under the chief executive of the local government—a mayor or city manager.

Planning entails a systematic effort to lay out a suitable physical framework for the community by the designation of major land-use districts, principal routes of circulation, and basic public improvements. But city planning, which started as a reform movement, has always been concerned with social and economic problems and prospects—housing needs parks and open space, employment patterns and investment opportunities. In essence, then, planning is a process by which a community perceives the future, articulates its objectives and considers its alternatives. Planning is now regarded as a continuous process because advancing technology and changing citizen preferences are continuously altering the opportunities for community development.

In many communities planning has been practised for three decades or longer. But it is largely confined to the individual municipality, often only a part of a metropolitan area. Planning on a metropolitan-wide basis has been conducted in some areas for particular functions, such as water and sewerage facilities, park systems, and more recently, transportation systems. But comprehensive planning for entire metropolitan areas is still in its infancy. The most obvious reason is the absence of general governmental jurisdictions embracing whole metropolitan areas. Indeed, there are more than 16,000

political or administrative jurisdictions in the 212 metropolitan areas of the country. Behind this lies numerous power centres in each locality whose interests are difficult to reconcile. But there are also unifying forces which support area-wide planning.

GROWTH OF METROPOLITAN AREAS

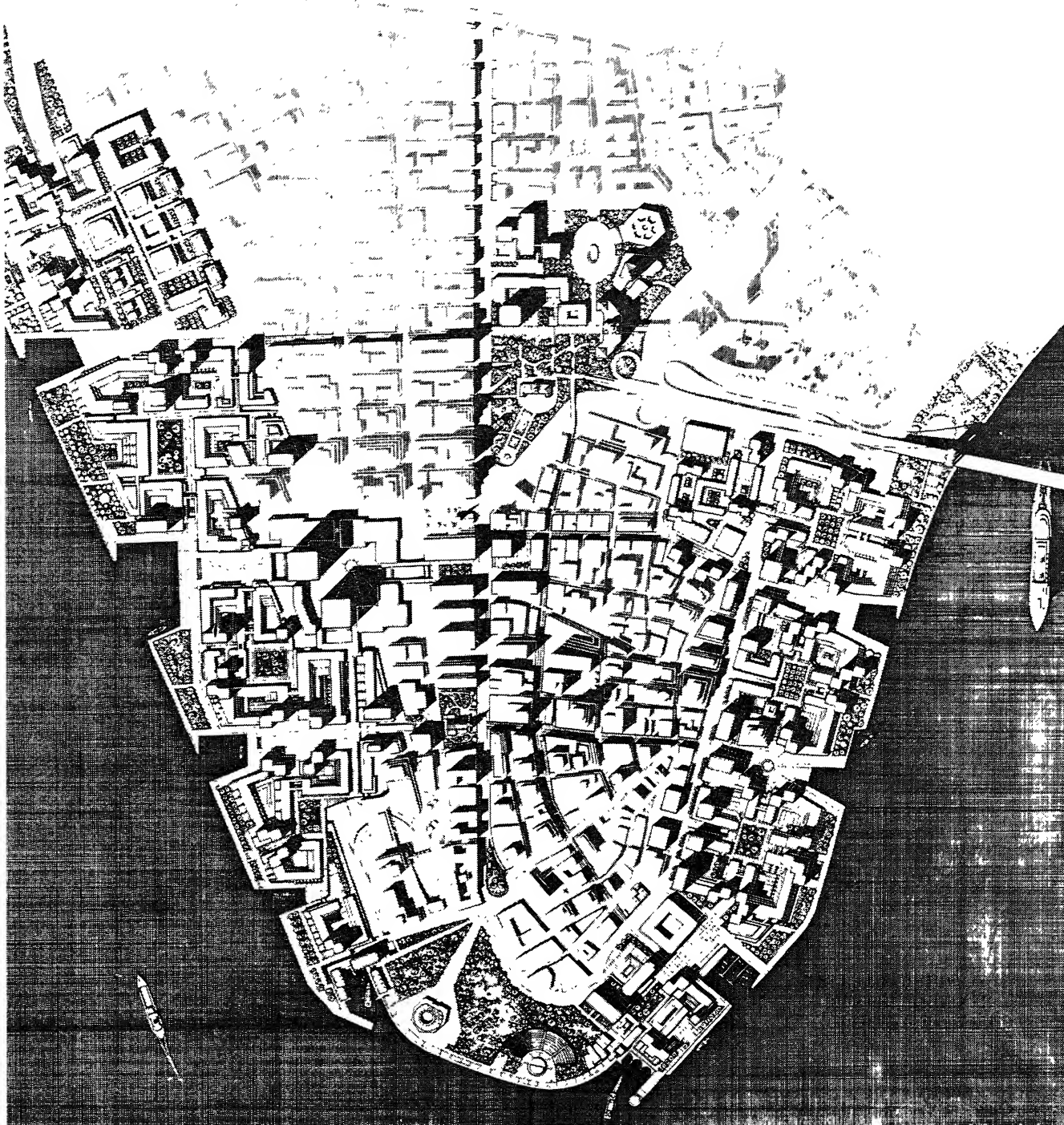
For statistical purposes the Federal Government uses the term “standard metropolitan statistical areas” to define an area containing at least one city, or pair of cities, with a population of 50,000 or more and often one or more contiguous counties with certain physical, economic and social ties to the central city. The 212 areas identified in the 1960 census ranged from New York, with a metropolitan area population of well over ten and a half million, down to Fort Smith, Arkansas, with a population of under 70,000. Together, these areas contain 63 per cent of the nation's total population; between 1940 and 1960 the population growth of these areas accounted for 96 per cent of the national increase.

The overwhelming economic advantages of metropolitan concentration in an advanced industrial society have been amply documented. In a word, these turn on tremendous external economies of scale that permit high specialization of skills, massive investments in transport and other public facilities, and the grouping of cultural and educational institutions. These concentrations also give rise to significant diseconomies, however, such as contamination of air and water, traffic congestion, and social frictions.

The spatial pattern of metropolitan growth is particularly significant. Gridiron streets and blocks were the dominant pattern for laying out early American cities. They made for a quick, measurable division of land and facilitated the development and sale of parcels for speculative profit. Today older cities in the United States must continue to live with a layout which is wasteful of land and inefficient for circulation.

The nineteenth century industrial city required dense concentrations of activities. Efficient utilization of steam-power demanded that factories be located close by the generating force. For lack of mass transport facilities workers had to find living quarters within walking distances of the factories and shops. Overcrowding of industrial and residential districts was the basis for rising land values in many growing cities.

* Adapted from Paper No. 26 submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.



Credit: New York City Planning Commission

Lower Manhattan Plan

With one of the greatest concentrations of office buildings in the world, Lower Manhattan will expand the land area around its waterfront on space presently used for docks. On this periphery, a residential community of 80,000 to 100,000 people will be built. The design features nine inlets opening on to plazas called "windows on the waterfront". These "windows" are connected by a waterfront esplanade around the tip of the island and several interior pedestrian ways converted from ordinary streets. The existing elevated expressway around the periphery will be relocated and depressed, allowing both freer pedestrian movement and avoiding obstruction of views over the water

With rising land values, the introduction of the elevator and steel frame construction at the turn of the twentieth century led to vertical expansion. Increasingly higher buildings were constructed for offices, lofts, department stores and some housing. But growth of industry and population also created pressures for outward expansion of residential and commercial districts. Horse-drawn mass transport facilities were organized in many cities but were soon replaced by electric trolley systems. In some cities underground subways and overhead rail transport also were introduced. These local transit improvements aided the development of outlying suburbs, which tended to be clustered close to the transit lines.

Thus we have witnessed in the United States the disintegration of the massed city and the swift diffusion of industry and population into the peripheral zones. Each successive wave of suburban development took place at a lower density. This new form of human settlement now reflects the private passenger car, electrification of the countryside, single-storey manufacturing plants, rising family income, and not least, the readiness of the urban population to accept the long daily commuting implied by residential densities of two to five homes per acre.

The American metropolis today is a large and productive complex but also a fragmented and costly organization. The central cities have lost many middle-class residents to the suburbs and are increasingly populated by lower-income families. Seventy out of 257 incorporated central cities actually lost population between 1950 and 1960. Commercial property values, which provide a significant part of the central city tax base, have declined. Maintenance and repair of residential buildings in many older neighbourhoods have been neglected with a consequent spread of blight. Meanwhile, the cost of city services has risen.

In the independent incorporated cities in the suburbs, on the other hand, there are heavy demands for investments in schools, fire stations, streets and utility lines to accommodate the rapidly expanding populations. The provision of these community facilities by the numerous and relatively small individual suburban governments has proved costly. Not only are costs of financing higher than those available to larger, consolidated jurisdictions but the facilities themselves are commonly too small to achieve full economies of scale.

The patterns of metropolitan growth in the United States leave much to be desired. More than one million acres of land, sometimes at distances of fifty miles from the metropolitan centre, are being taken up each year for new development, and usually without conscious choice, density, pattern or functional relationships by the metropolitan public. Permanent park and open space requirements have been neglected. Nor are there yet effective public measures to reserve land needed for later development at industrial parks, moderate and low-priced housing, rights-of-way for future highways or other public improvements. Metropolitan growth thus presents a formidable challenge to planning in the United States.

THE EXTENT OF METROPOLITAN PLANNING IN THE UNITED STATES

There has been a significant growth in planning activity for entire metropolitan areas in the post-war years. Some of this planning is unofficial, that is, carried out by private groups such as the Regional Plan Association of New York. There being no governmental entity empowered to programme or zone for the whole metropolitan areas, such planning is advisory only. Indeed, there is only one metropolitan area that is served by a single governmental unit—Dade County, Florida, which covers all of the metropolitan area of Miami. Impressive planning programmes are found in certain functional authorities such as the metropolitan District Commission in the Boston area, and the Port of New York Authority. But these are concerned with only a few functions, and planning by these bodies cannot cover the whole spectrum of metropolitan community problems and objectives.

Metropolitan planning, as considered here, is generally carried on by a board or commission authorized by state law, and has representatives of at least the more important governmental units. It recruits a staff or retains consulting firms to do its technical work. Unlike a city planning board, it does not report to a single executive or legislative body but makes the plans it develops available to the officials of all of the political units in the area. Its recommendations may be accepted or rejected by any or all of the political units in its planning area. Success in seeing its plans adopted depends not on legal authority but on inherent merit, common deliberation and selective compromise.

Plans by advisory bodies are useless without support of the various private and public interests whose decisions will govern the future development of the metropolitan area. If the representatives of private utility companies, railroads, leading industries and city and local government officials in a metropolitan area can be brought into the planning process at an early stage, agreement and understanding on over-all physical development is far more attainable.

A form of organization which draws together representatives of the public and private interests in metropolitan planning has begun to take shape in the United States. One organization of this type is now operative: the Penn-Jersey Transportation Study,¹ focussing upon the cities of Philadelphia, Camden and Trenton, and involving nearly 5 million people. The study is financed largely from the highway departments of the States of Pennsylvania and New Jersey and the United States Bureau of Public Roads, but also by the nine counties and the City of Philadelphia. Each of these agencies and political jurisdictions is represented on the policy committee for the study. There are, in addition, a technical advisory committee and a civic advisory committee with members representing private industry and commerce, home

¹ The scope of this study transcends transport since future travel is being calculated as a function or result of future metropolitan development patterns, rather than being derived from trends in highway and transit usage alone.

builders, labour, professional groups and citizens' groups. In this way varying points of view are heard and area-wide participation is secured for planning, and hopefully for subsequent implementation.

A related innovation is the establishment of a regional conference of elected officials. Among other activities these groups serve as an official audience for the metropolitan planning board and prompt continuing communication between the elected officials and the planners. Often there is also an unofficial citizens' planning association with a paid staff which helps to publicize the work of the planning board and offers constructive criticism. These efforts represent a grouping of public officials and civic leaders toward consensus about metropolitan development through voluntary arrangements. The emergence of the conferences reflects both a recognition of common problems of many jurisdictions in a metropolitan area and a reluctance to surrender power to a federated or consolidated government.

FEDERAL ROLE IN METROPOLITAN PLANNING

Because metropolitan planning involves co-operation between different jurisdictions, often between urban and rural or suburban units with different outlooks, it is much more difficult to organize a metropolitan programme than one for a single city or county. It is partly for that reason that federal funds have been available, since the Housing Act of 1954, to help finance co-operative programmes.

Of the 212 metropolitan areas in the United States, planning work in eighty-four had been financed in part with federal funds by 1961. Generally those funds have been used to prepare comprehensive plans for metropolitan development, although at times they cover only limited elements, such as metropolitan park systems.

Major aspects of metropolitan area planning can also be financed in large part with federal aid highway funds through the state highway departments, as in the Penn-Jersey Transportation Study. The United States Depart-

ment of Commerce which administers the highway programme and the Housing and Home Finance Agency which administers the urban planning assistance programme have been encouraging the joint use of these federal monies to encourage fully comprehensive area-wide planning. Five agreements of this type were concluded and twenty more were in preparation by 1961.

It should not be assumed that metropolitan planning is undertaken only in response to federal funds. Major metropolitan areas have carried on planning work for years without federal assistance. Nevertheless, federal grants are likely to be increasingly important in inducing metropolitan planning in the years immediately ahead.

Two new federal programmes enacted in the Housing Act of 1961 are expected to offer powerful stimulus to planning. The programme of partial grants to acquire land for permanent open space requires that the applying jurisdiction be actively carrying on a programme of comprehensive planning for its urban area, and the land to be acquired must be shown to be important to the execution of such plan. Likewise, with rare exception, loans for mass transport facilities and equipment may be made only where a programme for a co-ordinated mass transport system is being actively developed. Whether or not a mass transport programme is considered acceptable depends in large part on planning for the total transport system and comprehensive planning for the whole metropolitan area. The day may not be far when all federal grant programmes affecting the urban environment and metropolitan development will be linked to metropolitan planning.

One hallmark of a democratic society is the opportunity of the people to exercise choice among alternatives. The role of metropolitan planning is to present in a systematic way the choices that the people can make in guiding the development of their metropolis. Metropolitan planning will not, any more than metropolitan government, solve all our problems. Rather, it can help to clarify the public objectives of the community and suggest ways to achieve them.

PROVISION OF WELFARE AND CULTURAL FACILITIES AND PUBLIC UTILITIES IN THE CITIES OF THE UNION OF SOVIET SOCIALIST REPUBLICS*

P. N. BLOKHINE

Since October 1917, Soviet town planners have carried out an enormous job of building new cities and reconstructing old ones. The housing stock increased more than four times. Many thousands of industrial, medical, public and other structures have been built. Numerous new gardens and parks, water reservoirs, sports centres, and such, have been provided.

The main problem of overcoming the housing shortage is being solved successfully. The seven-year plan (1959-1965) provides for construction of fifteen million new flats in cities and towns and close to seven million in the rural areas. In 1959 and 1960, 3 million dwellings were built annually in the towns and rural localities—more than fourteen dwellings per thousand inhabitants. In building construction the Soviet Union now takes first place in the world.

The growth of the urban population will continue on the basis of the planned development of industry in the country and the mechanization of agriculture. This determines the gigantic scale of town building.

In the Soviet Union, where private property of land, implements and means of production no longer exists, where there is state planning of the national economy, where the building industry has been developed at an unprecedented pace, conditions have been created for the construction of highly-comfortable, healthy and beautiful towns and cities. Town building in the Soviet Union is carried out in the interests of all.

The scale and acceleration of town building are conditioned by the growth of industrial and housing construction. The draft programme of the Communist Party of the Soviet Union, which has been published and widely discussed, determined as the key economic task the establishment of the material and technical basis for communism.

This gigantic task will be mainly achieved through complete electrification, mechanization and automation of production processes, both in industry and in agriculture, the development of new and efficient branches of production to ensure the greatest technical progress, a full use of new types of energy and materials, and a sharp rise in labour productivity. The rational location of industry will be of great importance, effecting a saving

of labour, ensuring the development of regions, eliminating the high density of population in large cities, reducing the considerable differences between urban and rural areas as well as further equalizing economic development in the different parts of the country. In Soviet town building practice great importance is attached to regional planning. In the country where there is state planning of the national economy, regional planning becomes an integral part of the whole process.

REGULATION OF URBAN GROWTH

Rational resettlement becomes imperative for the location of production. As a result of industrial growth, considerable changes will take place in the proportion between urban and rural populations within twenty years. According to our calculation the proportion of the urban population will increase from 50 per cent in 1960 to nearly 70 per cent in 1980.

The development of old industrial areas, and of new ones, especially in the eastern part of the country, will necessitate essential migrations from some districts to others as well as from the rural localities to industrial centres.

As proven by experience and by the science of town building extremely large cities as well as very small settlements suffer from grave shortcomings, which reduce the well-being of the inhabitants and in the long run lead to excessive expenditure on town building. Regulation of urban growth is therefore one of the most pressing—and complicated—problems of modern town building.

Thanks to state planning and to the state ownership of all industrial enterprises, all the conditions exist for rapid progress in the productive forces of the country, a comprehensive use of natural resources and a rapid advance of technology, science and consequently a harmonious combination of the essential elements of human life: labour, way of living, rest, upbringing of children and education.

It is from this angle that Soviet town planners raise the problem of resettlement. They endeavour to eliminate overpopulation in large cities, to stimulate the development of middle- and small-sized towns, and to transform gradually the collective-farm villages and localities into enlarged urban settlements. All settlements will have well-built dwellings with public utilities, cultural, social and medical institutions. They propose to ensure equally

* Paper No. 31 submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

favourable conditions of life for the whole population—especially as between the rural and urban populations—including cultural and welfare facilities.

The way to solve this problem includes stopping further construction of new industrial enterprises in overpopulated cities, developing industrial construction in middle- and small-sized towns and settlements, concentrating agricultural construction in those villages which are centres of large collective farms, developing a system of local cultural centres in the agricultural districts for the satisfaction of the cultural and welfare needs of neighbouring areas. To help check the growth of big cities, mechanization and automation in industrial production makes it possible to increase the capacity of existing plants without calling for new manpower from the outside.

Towns of optimum sizes should constitute the basis for future resettlement. These optimum sizes are determined by the conceptions and conditions under which the town is to be created, as well as by that necessary to ensure good amenities, sanitary conditions and comfort for the inhabitants with the lowest expenditures on construction and use of buildings, installations and equipment. It is also necessary to consider the local peculiarities of towns. Hence it is advisable to develop middle- and small-sized towns to a size of 100,000-250,000 people. Such a size corresponds to the number of people necessary to sustain the main branches of industry. In towns of this size it can be easy to provide good connexions between residential areas and industry without requiring complicated and expensive transport, and there is no loss of time travelling to work.

In towns of this size it can be easy to secure rather high standards and a variety of cultural and welfare amenities. The construction of rather large theatres, palaces of culture, sports grounds, trade centres and hospitals is fully justified. It is possible to create in them expedient and economic systems of engineering equipment. Finally it is easy to ensure good sanitary conditions and access to natural environment.

When necessary it is possible to create systems of town settlements which in a small region may correspond to the optimal conditions of a single town-building unit.

When limiting growth of big cities it is necessary to bear in mind that the city and its suburban zone constitute a whole. Therefore general plans for the development of cities and the planning of their adjacent areas must be worked out simultaneously, including communication and a single system for regulating construction.

PLANNING OF TOWNS

Rational methods of planning and construction of new towns must provide:

- (1) A convenient distribution of residential areas and industrial enterprises, eliminating the harmful influence of industries and reducing distances and travel time between dwelling and industrial areas;

- (2) Convenient living conditions for the urban popula-

tion while preserving the benefits of the natural environment. This can be achieved through improvement of sanitation, purification of land, water and air through planting of trees and the like;

- (3) Provision for the growing cultural and welfare needs of the population in industrial localities, dwellings and recreation areas;

- (4) The organization of convenient, safe, fast and noiseless transport to connect the different parts of the town and suburban areas;

- (5) Increased housing comfort through the construction of rational types of dwellings with modern types of equipment and amenities.

To complete the task of creating the best living conditions for the population in our country in the years to come, work on projects of town development will be intensified. It is impossible to achieve the reconstruction of the towns and settlements in the right way without general plans for their development. Therefore it is envisaged in the present seven-year plan to make improvements in all the towns, settlements and rural areas.

The anticipated lifting of labour productivity in industry in the next twenty years will necessitate great changes in the structure of industry, a sharp rise in the technical standards of production, and much will depend on effective planning and construction of industrial areas. In all branches of industry measures are being taken to sharply reduce the costs of industrial building. New elements have appeared such as scientific and engineering centres which are to carry out research work to improve production and to train skilled personnel for industry.

A system of public amenities, municipal services, medical institutions, etc., is developing in the industrial areas to further improve working conditions. New solutions should be found to organize physical exercise and recreation for the workers and employees according to the specific type of activity they are engaged in. The network of medical institutions must include more dispensaries shared by a group of enterprises. It is also necessary to raise the standard of architecture and to improve the organization of public services.

PROVISION OF CULTURAL AND WELFARE FACILITIES

The draft programme of the Communist Party stated, among other things, that

“To secure a happy childhood for every child is one of the most essential and noblest tasks connected with the formation of communist society. In towns and villages the creation of an adequate number of nurseries and kindergarten playing grounds and pioneer camps for children, which are all free, is envisaged.”

During the seven-year plan from 1959 through 1965 some 14 million places for pre-school children will be created, including about 2 million in boarding schools. Children's institutions are located as near as possible to their homes, either in every big dwelling structure or in a group of houses with 1,000-3,000 inhabitants. Some of the children will be sent to the special children's towns

in the most healthy and picturesque suburban areas. Children of school age will study partially in boarding schools, partially in schools with prolonged daily attendance. Boarding schools will also be located mainly in residential areas near the children's homes.

Public catering in the country grows more important each year, with gradual transition to free dinners in enterprises, offices and collective farms. This will call forth the development of catering systems in all structural divisions of towns and villages. The principle of organization of a catering network consists of enlarging and specializing the production of ready-to-eat food (storing and processing half-finished food products); it also means reducing distances between catering establishments (dining-rooms, cafés and house kitchens) and the number of people using them. Besides dining-rooms at places of work and near dwellings, a wide network of restaurants and specialized dining-rooms with a variety of dietetic and national dishes is developing in the town centres at squares and parks.

For the development of a medical assistance system polyclinics are to be located in every residential area. Large central, district and specialized hospitals will be located in green spaces of towns.

One of the most important goals is to ensure the upbringing of physically strong young people with harmonious development of physical and spiritual strength. Physical culture is taught very early. A broad and varied network of physical culture and sports establishments will permit the people to actively participate in sports and physical culture at their working places, in educational institutions, and in residential areas.

The higher education institutions constitute one of the mass networks of social service. This increases the mass character of higher-education institutions. Experience of the last few years shows that further scientific and engineering problems will be solved through the combined efforts of research institutes, higher-education institutions, factory laboratories and experimental departments in plants. This determines the siting of the large number of higher educational institutions in the industrial areas of the town and in the large agricultural localities.

Soviet town building practice shows that it is expedient to divide public amenities into three groups:

(1) Establishments of daily use, located within a radius of approximately 300-400 metres of dwellings. They include an eight-year school and kindergartens, grocery shops, dining-rooms, establishments of daily repairs, sports grounds and parks;

(2) Establishments of periodic use which serve a wider area of about 900-1,000-metre radius. They include clubs and cinemas, department stores, grocery shops with a great variety of goods, restaurants, post and telegraph office, bank, polyclinic, drugstore, physical culture centres and gardens;

(3) All-city establishments in the central districts of towns, including theatres, halls, specialized grocery shops and department stores, centres of specialized repairs,

stadiums, parks, etc. In big cities it is also necessary to have additional all-city establishments located in districts for 100,000-150,000 people. The structure of residential areas must be formed according to the above-mentioned grouping of public amenities to ensure the best pattern of facilities.

Establishments of daily use are located within neighbourhood units. Proceeding from the optimum sizes of public amenities and their reasonable distances from dwelling houses, optimum sizes of neighbourhood units range between 4,000 and 8,000 people living in three- or four-floor apartments.

Provisions should be made to enlarge dining-rooms, repair establishments and other services, as well as premises for cultural and educational work, collective studies and games, family evening-parties, etc.

These explanations show that such neighbourhood units are an important element of social organization for the inhabitants of the town.

Various methods of planning can be used. There is a general demand to border neighbourhood units with main streets so that children will not be endangered by intensive traffic. Usually a neighbourhood unit is located on about twenty- to twenty-five hectares limited by highways, and two or three neighbourhood units can be built on larger areas of fifty to seventy hectares. As a rule, local units are combined by the general system of green spaces and passages into a single complex. Thus the planning of neighbourhood units makes possible a clear division of the area, the displacement of car traffic and the building of convenient pedestrian passages.

Establishments of periodic use, intended for services for the population of several neighbourhood units serve as a basis for the amalgamation of neighbourhood units into a dwelling district. Proceeding from a radius of availability not exceeding 800 to 1,000 metres, the population of a dwelling district should be about 25,000 to 35,000, and include four to six neighbourhood units of about 6,000 persons each.

The following establishments should be provided: club (with a hall and work-rooms for various societies), cinema, trade centre (which includes a department store) grocery shop with a wide variety of goods, restaurant, personal service shop, post and telegraph office, bank, a dwelling maintenance office, drugstore, polyclinic and maternity centre, stadium with a complex of physical culture grounds, sports hall and swimming-pool, and rest-garden.

All establishments will be located in proximity to each other, to form a district centre. Additional facilities such as hospitals, warehouses, and mechanized laundries are located to serve several districts, all isolated from houses. A district with a population of twenty-five to thirty-five thousand, occupies an area of about 150-200 hectares. Only streets of district importance with access by urban transport (buses, trolley-buses, etc.) can be built.

Finally, establishments of city importance are located in the central districts of the city near highways of city

importance to make them easily accessible to other districts. As a rule these public buildings are grouped and form a city public centre, though some establishments of city importance (stadiums, hospitals, etc.) are located outside city centres.

PLANTING OF GREENERY AND ORGANIZATION OF MASS RECREATION

The development of Soviet towns will necessitate a number of measures to eradicate the pollution of air, soil and water. The planting of greenery ensures the sanitation of the air, the improvement of the local climate, the lowering of city noise, the reduction of dust-producing surfaces. For increasing the efficiency of greenery, it is necessary to ensure a connected system of trees and shrubs throughout the city and suburban area.

Dwellings must not exceed 200-250 metres from tracts of trees and shrubs. These should be connected by boulevards and pedestrian ways framed by trees and shrubs. Such lines of greenery will traverse the whole city in varying directions. They will increase the safety and ease of pedestrian traffic, permit a clear division of land into city districts and business zones and ensure a direct connexion with suburban parks. It is usually advisable to use green planting along the banks of rivers and ravines.

Tracts of green plantations must be not less than four to five hectares and preferably up to ten to twenty hectares. The effect of green plantations upon metropolitan areas becomes especially significant when one can ensure their continuity. Then they can begin fulfilling the function of city lungs. With their help the healthy fresh air of forests, fields and plains penetrates into all pores of the city territory.

CITY TRANSPORT

The provision of a good connexion between separate districts of the city especially between dwellings, places of work and recreation facilities necessitates advanced means of transportation. In cities of the Soviet Union, public transport will acquire equal significance with taxi service and cars for hire. In large cities high-speed subways, trams and express buses will be developed.

For the successful solution of the city traffic problem the street network must be laid out clearly and subdivided into:

- (1) High-speed highways for intensive motor traffic;
- (2) Avenues with mass public means of transport;
- (3) Local streets and passages into the neighbourhoods;
- (4) Footways.

While preparing the city general plans it is necessary to envisage the progressive development of transport, the possibility of gradually building highways for fast traffic, the separation of transport and pedestrian traffic, and the possibility of introducing new types of high speed transport. Central squares and streets which attract a large number of inhabitants should be mainly designed for pedestrian traffic and at the same time be fed by convenient transport lines.

ECONOMIC PROBLEMS OF TOWN BUILDING

Soviet town planners pay great attention to raising the effectiveness of capital investments, selecting the most profitable and economic methods of capital construction, as well as ensuring everywhere the highest possible increase in production per rouble of investment, and reducing the amortization period of such investments. The effectiveness of urban investments, i.e., the achievement of maximum effect with minimum construction and operation expenses, should be ensured by:

(1) A rational location for new towns and for expanding existing ones, considering all factors which influence the economy of construction and maintenance, the natural conditions of the territory, distances from power-plants, water supply sources, sewage outlets, transport, etc.;

(2) Finding the best settlement system (a single town or a group of towns);

(3) A rational use of city areas—correlating different elements of the metropolitan area;

(4) Selecting the right alternative building location on either new or redeveloped sites;

(5) The use of the most rational planning and development methods for networks of engineering equipment;

(6) The use of the most economic types of dwelling and public buildings, including the number of storeys.

Adherence to definite proportions of capital investments in housing, cultural, welfare and municipal construction is one of the most important issues of town building, as favourable living conditions for the population depends upon it.

The Soviet people demand from its planners a high degree of efficiency and a comprehensive approach to solution of town development problems. Soviet cities and towns must be comfortable for work and for the life of the people. They must have irreproachable sanitation and pure air and clean water. They should provide the inhabitants with all the most modern cultural and welfare facilities. At the same time the architecture must evoke a feeling of æsthetic satisfaction corresponding to the æsthetical ideals of our community. Thus cities and towns must strive to be ideal, socially and technically, and also be remarkable for their works of architecture.

OUTLINES OF METROPOLITAN DEVELOPMENT PROBLEMS OF PRAGUE*

JIRI NOVOTNY AND J. STVAN

Prague is a town with a thousand-year history. The metropolitan area covers 180 square kilometres. There are one million inhabitants. These facts, along with difficult physical conditions (elevations vary some 200 metres) have created serious problems of planning and administration in Prague. The other four towns over 100,000 inhabitants are Brno (300,000), Bratislava and Ostrava and Plzeň.

Prague has a fairly old industrial tradition as well as primary cultural significance for the whole country. Thus a precondition is given for a clear balance between main functions. Prague has by far the largest number of working places in industry among the Czechoslovak towns, and accounts for some 11 per cent of the gross national industrial output.

Far-reaching economic investigations were the background for a governmental decree stating that "Prague shall not exceed by 1980 substantially more than one million inhabitants", e.g., the figure reached in 1960.

This decision is obviously based on the planned nationwide development of existing industry and on the effective location of new enterprises in all branches of the economy. The national perspective plan calls for most industrial and other development to be in the less developed regions—Slovakia and Southern Bohemia—and to direct the investments towards the raw material bases, the water resources, and the labour resources in agricultural areas. Thus an equalization of economic conditions and living standards will be achieved; the differences between the towns and countryside will be abolished.

Decentralization of all branches of national economy from the capital to the regions is taking place simultaneously: public administration (especially economic planning), cultural life, trade and education. These will give all regions new qualities, possibilities and responsibilities. Universities, technical colleges, theatres, international fairs are all involved. A very high degree of autonomy is being given to the eastern part of the country—Slovakia, with its capital Bratislava.

One can understand, that these tendencies have not only advantages for the respective regions of the country, but also lead to problems in the capital itself, whose population feels uneasy because of the strict decentralization measures. But the advantage for Prague itself lies

in the better opportunity to reorganize the economic forces to help improve its urban structure.

Prague has a clear radial-concentric structure; the Vltava River flows through the town from south towards north, creating a natural axis. The oldest parts of the metropolis lie on both sides of the river. The river valley is irregularly shaped, forming rather steep slopes which permit large-scale development mostly in the more level eastern parts of the city. The dish-shaped form of the area creates a clear watershed that could be considered as the natural limits of development. Of course, such physical obstacles cannot prevent a town from growing behind its natural limits, if the economic conditions so warrant.

The basic principles of the master plan are that (a) the metropolitan area shall not be enlarged, either in population or area; and (b) the rising needs of the metropolis shall be satisfied in three different ways:

(1) Development of new residential areas, shopping and cultural centres and facilities, industrial zones on open lands within the metropolitan boundaries. Some 120,000 flats will be built for nearly 400,000 inhabitants by 1980. Mainly by this measure the quantitative aim shall be achieved. These objectives will also contribute to general redevelopment;

(2) Redevelopment will take place mainly in central areas, but also in the adjoining inner ring and even in the outskirts of the town. Whereas in the centre the redevelopment will be a delicate matter, aiming more or less at the rehabilitation of historically valuable complexes, in other parts of the town redevelopment will involve successive clearance of housing stock. Some semi-rural margins of the metropolis will be redeveloped. The redevelopment aimed mainly at qualitative changes in the town structure, will mean the destruction of approximately 80,000 flats in the twenty-year period. This will be done in co-ordinated and concentrated actions. About 44,000 new flats will arise for approximately 150,000 inhabitants in well planned residential units. This procedure will expand after 1965.

In parallel actions some old industrial areas will be redeveloped. In the place of scattered and manifold enterprises there will be large-scale industries. Small enterprises that have become inconvenient neighbours to people in functionally mixed areas will be replaced.

Redevelopment of traffic system will take place according to numerous precise needs. The plan assumes one car

* Paper No. 28 submitted for the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

for five inhabitants by 1980. To help solve the traffic problem, mass transport facilities will be improved;

(3) Conservation and rehabilitation of old but sound dwelling stock will take place mainly in areas developed after World War I. A special problem is presented in the historic core of the town. This is a rather large central area covering 400 hectares of intensively built-up land. It lies in the surroundings of the medieval castle and presents a world famous panorama. There are a great number of houses of medieval origin, some of them having romanesque ground-floors and cellars, and many others with an extraordinary historic and artistic value. The medieval ground plan has been largely preserved up to our time and represents a first class document of social and cultural evolution.

On the other hand these ancient buildings, as interesting as they may be, are in rather bad condition, both structurally and functionally. They do not fit, as they are, the standards of our society, having been shaped according to the needs of knights and brave citizens in times of a general ignorance of hygienic regulations, traffic and other peculiarities of our century.

It will be our responsibility to find the optimal measures for rehabilitation and to give the historic core appropriate up-to-date functions. By and large, the residential func-

tions will be replaced by various more suitable cultural and social functions.

Another main principle of the master plan is to develop the suburban zone to accomplish what cannot be realized within the metropolis itself. In the metropolitan region the master plan must solve three problems:

(1) To create a better, more effective interrelation between working and residential areas, overcoming what is now a one-sided influx of 50,000 employees daily. An emphasis will be put upon mass transportation;

(2) To develop well equipped and spacious recreation areas, whose importance will grow with the gradual shortening of the work week to thirty-five or thirty hours for all people;

(3) To develop areas with water and building material resources and to promote industrial co-operation in the whole region.

These principles are based on an economic and political hypothesis of the perspective metropolitan development for the next twenty years. We consider a nation-wide economic plan, one that is able to co-ordinate large investments to fit the needs of all regions and all towns and specific conditions, a necessary instrument for the effective regulation of the metropolitan area.

URBAN PROBLEMS AND PLANNING WITH SPECIAL ATTENTION TO TRANSPORT PROBLEMS IN TOKYO*

SUSUMU KOBE

THE DEMOGRAPHIC TRENDS AND THE GROWTH OF CITIES

The growth of urban population has been very pronounced in Japan, as in other countries. At the end of the war in 1945 the population of Tokyo was less than half that of 1940, and shows that the push from rural to urban centres can work in reverse under unusual circumstances. Such a reverse push from urban to rural district occurs during a period of deteriorating standard of living. People leave the cities for sheer lack of foodstuffs. This was true not only in Tokyo but in all the larger cities in the country.

Table 1. Population of Greater Tokyo (Tokyo-to), 1935-1960

Year	Population
1935	6,363,190
1940	7,347,610
1945	3,488,284
1950	6,277,500
1955	8,037,084
1960	9,683,802

Note: all figures except that for 1945 are census figures. The 1945 figure was arrived at from a sample survey. All figures taken from *Tokyo-to Keizai Hakusho* (Greater Tokyo Economic White Paper) 1961, compiled and published by the Research Section, Bureau of Economics, Tokyo-to, p. 1. Greater Tokyo includes the area defined by law as Tokyo-to. The old city of Tokyo with 23 wards had a population of 8,300,000 in 1960. The urban part of Tokyo-to had a population of 9,116,384. *Dai Nippon Bunken Chizu* (Map of Japan by Prefectures, 1961, Kokusai Chigaku Kyokai, Tokyo).

Since 1945, however, the situation has been quite different. For about five years former residents returning to Tokyo accounted for a large part of the annual increase of 20 per cent in 1946, 19.5 per cent in 1947, 8.3 per cent in 1948, 9.8 per cent in 1949.¹ By about 1955, most of the former residents intending to return had apparently returned, for the rate of increase since then has been lower and more stable, fluctuating from 3 to 6 per cent per year. An increase of this order is a normal phenomenon attendant upon the development of the national economy, the urban or industrial centres growing faster than rural economies and creating income

differentials which in turn exert a pull by attracting people away from the country districts.

That this migration of the rural population in the last ten years has not been due to the push of population pressure in rural districts, but rather the result of the pull exerted by higher average income and job opportunities in the cities, is clear from the fact that agriculture is feeling the pinch of a labour shortage. Wages of farm labour in the middle nineteen-fifties were \$1 a day, but rose to \$3 in 1961, and in remote districts over \$2 per day.² In 1955 the percent of people gainfully employed in agriculture to the total employed in all occupations was 43 per cent, but by 1960 this had dropped to 35 per cent.³ The present working population in agriculture is about 14,500,000 but this is decreasing by 300,000 to 400,000 each year, and is expected to go below 10 million by 1970.⁴ The rural labour shortage has brought with it a level of mechanization thought impossible some years ago because of the limited size of farms. In 1955, 90 per cent of the farm households had farms of less than 1.5 hectares.⁵

But where there is demand there will be supply. The makers of machinery have come out with small tractors and other motorized farm implements. Where a machine is too costly for one to own, farmers have grouped themselves to buy it in partnership. This mechanization, together with improved seeds and more fertilizer, has raised farm productivity per labourer and per farm area until Japan is almost self-supporting in staples. It has also meant higher farm income to provide expanding markets for domestic industry. What has taken place in this country clearly shows that before a country can raise the standard of living of its people by a substantial amount, urban areas must exert a strong "pull" not only

² *Nihon Keizai Shimbun* [Japan Economic Daily News], morning Tokyo edition, August 24, 1961, p. 3.

³ Government of Japan, Ministry of Trade and Industry, Research and Statistics Section, *Nihon Sangyo no Genjo* [Present Status of Japanese Industry], (1959), p. 162.

For the 1960 figure, see *Nihon Keizai Shimbun*, op. cit.

⁴ Government of Japan, Ministry of Finance, Committee for Economic Investigation, *Kokumin Shotoku Baizo Keikaku* [Plan for the Doubling of National Income], (1960), p. 187.

⁵ Government of Japan, Ministry of Finance, Economic Planning Agency, *Keizai Yoron* [Economic Handbook], (1960), p. 160. Only 3.6 per cent of the farming households have farms of over 2 hectares, 6.5 per cent of the farm holdings are 1.5 to 2 hectares, and 16.9 per cent are 1 to 1.5 hectare, 72.8 per cent less than 1 hectare.

* Paper No. 27 submitted to the United Nations Group of Experts on Metropolitan Planning and Development, Stockholm, 14-30 September 1961.

¹ Government of Greater Tokyo, Bureau of Economics, Research Section, *Tokyo-to Keizai Hakusho* [Greater Tokyo Economic White Paper] (1961), table 1, p. 1.

to rid the rural economy of disguised unemployment but to attract younger people away from the villages.⁶

But the urban pull creates its own problems in the form of overpopulated cities. The four great industrial districts of Japan, the Tokyo-Yokohama area, the Nagoya-Yokkaichi area, the Kobe-Osaka-Kyoto area, and the northern Kyushu area, are the only areas in Japan which show a net increase in population. These areas contain the eight largest cities in the country.

THE PHYSICAL PLANT

The physical plant in cities has not been able to keep up with the influx of people from rural districts. The results are housing shortages, crowded trains, traffic congestion, more crimes of sex and violence, in short, the urban problem. As in so many major cities in the world, the urban problem increased to an appalling magnitude before it was recognized.

Government housing projects, both national and municipal, have not been able to keep up with demand. In Tokyo's twenty-three wards, as of May 1960, 20.6 per cent of the families were estimated to be in need of housing. For the six largest cities in the country, the conditions were more or less the same, except in Nagoya.

With land values in or near the central business district (CBD) soaring to heights prohibitive for private residential uses, more and more people build houses in the suburbs. The government housing agency seeks locations in the suburbs. New suburbs thus spring up and add to commuter traffic and congestion undreamed of in pre-war days. For Greater Tokyo, the night-time population was found to be 9,645,121 on October 1, 1960, whereas in the day-time it was 10,144,611, the difference being accounted for by influx from neighbouring prefectures. The same sort of situation prevails in other large cities. Such figures do not give an indication of the magnitude of commuter traffic, for most of the movement in larger cities is within the city itself. At the Osaka Central Station on the National Railways alone, 2,333,000 people got on and off the train on the average work day in 1959.⁷ In Tokyo, during the peak month of December 1960, 21,143,810 passengers got on and off the trains only at the Tokyo Central Station of the National Railways, an average of 700,000 persons per day.⁸

⁶ Many rural villages have lost practically all their younger people to the cities. In a sample study it was found, for instance, that in a village in Okayama Prefecture with forty farm households, the youngest male was thirty-eight years old. There was only one farmer this age, and two in their forties. The rest were all older, or women. That cities have exerted this kind of pull to attract people away from the farms means that labour shortages in industrialized districts have become fairly acute, especially of younger workers. Many small businesses in Tokyo are closing down because they cannot get hired help.

⁷ Japan National Railways, *Tetsudo Tokei Nempo* [Railway Statistics Annual] (1959), p. 91.

⁸ The Metropolitan Police Board of Tokyo, *Keishicho Kotsu Nenkan* [Metropolitan Police Board Transport Annual], (March 1961), p. 33. Shinjuku Station, also on the National Railway lines, follows Tokyo with 20,167,879 passengers getting on and off in the same peak month of December in 1960. Ikebukuro Station ranks third with 16,442,952, and Shibuya fourth with 15,455,930, in December 1960. See page 35 in the same *Annual*. On the Tokyo

The congestion on commuter trains is beyond description. In winter time, because people wear overcoats and their individual dimensions are greater by about a centimetre than in the summer, the National Railways have to hire students during the rush hours as pushers to push passengers into the cars. It cannot be ascertained as to how genuine the dimensional reason given is, but it is a fact that without these pushers the doors on the cars of the train will not shut, and the trains cannot start unless all doors are shut. It is not uncommon to get ribs broken on these commuter trains.

The increase in automobiles and the resulting traffic congestion on the roads have posed no less a problem than commuter traffic on railroads. Car registrations are not particularly high in Japanese cities compared to cities in other countries but inadequate roads make the problem especially acute in this country.

The area devoted to roads as a per cent of the total is 10 in Tokyo and 9.4 in Osaka as compared with 43 in Washington, D.C., 25 in Paris and 23 in London.⁹ It is generally thought that the minimum space requirement for city roads is about 25 per cent but the only large city in Japan that comes anywhere near this figure is Nagoya with 22 per cent.¹⁰ To make matters worse, much road space has become parking area; stores encroach on public space by pushing their display cases on to streets by as much as six feet; and factories think nothing of using road space as their open-air storage area. Even private citizens place their garbage cans on the public right-of-way. Accident rates mount up, as can be seen in table 2, where accidents in Japanese cities are compared with those in some American cities.

Table 2. Fatalities per 10,000 cars registered, 1959

Cities	Fatalities
Greater Tokyo	22.9
Osaka	22.5
Nagoya	29.9
Yokohama	30.8
Kobe	36.8
Kyoto	30.9
New York	5.1
Los Angeles	2.9
Chicago	3.0
Washington, D.C.	2.7

SOURCE: the Metropolitan Police Board of Tokyo *Keishicho Kotsu Nenkan* [Metropolitan Police Board Transport Annual] (1961), p. 55.

The average speed of buses, including stops, has decreased to 15.4 kilometres per hour by March, 1961. On

municipal tramways, the peak month in 1960 was May, when 52,534, 849 persons were carried. The municipal buses carry about half this number. On the subways, the peak month in 1960 was March, with 14,533,656 being carried on the Ginza line and 13,266,782 on the Marunouchi line. Source, same *Annual*, pp. 38-39.

⁹ Government of Japan, Ministry of Construction, *Kensetsu Hakusho* [White Paper of the Ministry of Construction] (1961), p. 152.

¹⁰ Government of Greater Tokyo, *Tokyo-to Keizai Hakusho* [Greater Tokyo Economic White Paper], op. cit., p. 545.

many lines the average speed for street cars is between two and three kilometres per hour.¹¹ A trip from the downtown centre to Haneda airport, a distance of ten kilometres, often requires an hour by taxi.

To cope with this situation, plans have been drawn up to improve roads and extend subway lines. Under the 1957 subway construction plan, the total length around 1965 will be 116.9 kilometres (of which 30.9 were operating in 1957). Together with elevated railroads and suburban rail lines, the total urban rail lines will come to about 381 kilometres (as compared to 365 kilometres in greater London and 382 in New York City already operating) exclusive of railroad company lines coming into the downtown district.¹²

To provide Tokyo with a modern system of expressways, the Tokyo Expressway Corporation was formed in 1959, charged with the construction of 71.03 kilometres of controlled-access expressways in and around the heart of Tokyo. They consist of eight routes radiating out from inner and outer loop expressways around the CBD.

Parking garages are planned at strategic places. The Hibiya underground garage already in business can accommodate 470 cars, Marunouchi garage, 450, and the Yaesu, 265 cars. Others are planned at ten locations for about 3,400 more.

ECONOMICS OF THE URBAN TRANSPORT

All the improvements in Tokyo's physical plant are worked out in co-ordination with the plans and programmes recommended by the Greater Tokyo Metropolitan Regional Planning Commission. But there is a fundamental question in this planning which arises from a possible misconception of the problem.

Tokyo is too big, it is said, and seems to expand endlessly. The feeling that it is too big arises from very practical and pressing deficiencies in the functioning of a city. The physical plant just can not keep up with the growing demand. Water supply cannot be increased except at huge costs and, in any case, new reservoirs and dams cannot be built in less than five years. In the meanwhile in downtown Tokyo, buildings and industrial plants pump so much underground water that the ground level is sinking seriously. The sewer system cannot be reno-

vated except at prohibitive costs. Even garbage disposal is becoming an acute problem. Streets are woefully inadequate in width and extension. Trains are getting so crowded that commuters are tired out by the time they get to the office in the CBD. Truly, the city is too big.

The Regional Planning Commission has prepared a programme to improve the physical facilities on the one hand and to suppress further growth and concentration on the other. This they propose to do by inducing business and industry to move out to proposed satellite towns fifty to seventy kilometres from the CBD. The plan, they say, is apparently working out in London, and on a smaller scale, in Boston along route 128.

Where government institutions are concerned, the Government can order them to move out of the CBD to one of the satellite towns on the regional periphery. Reports have appeared in newspapers about talks being held in the Cabinet meetings to move national universities, government research institutes, statistical bureaux, etc., to outlying areas. It is clearly intended to move about 35,000 employees to a new town to be set up at a distance of sixty or seventy kilometres from the Tokyo CBD, which is expected with families to grow to a town with a population of about 180,000.

Some private businesses, too, have moved out. The most publicized example is that of the Dai-ichi Sogo Insurance Company, which is moving most of its staff and records to a rural district near the city of Odawara about eighty kilometres southwest of the Tokyo CBD. Many others too are building new installations in the suburbs because of the impossibility of finding space in or near the CBD.

But such a dispersal movement has been merely a trickle. Even if the removal of government installations with 35,000 employees is carried out, it is still extremely doubtful whether decentralization will succeed in suppressing the further growth of movement to the CBD. This brings us to the fundamental problem in the present urban planning in Tokyo. The plan calls for huge investments for improvement in the physical plant, especially as it relates to the CBD. To the extent that such a programme succeeds in ameliorating the present congested condition, to that extent it will make it more worthwhile to do business in the CBD.

The subway lines to be built, the National Railway's new Tokaido line, the express autoways with fully controlled access, all radiate from the CBD. Parking garages already in existence or planned are all in or near the CBD; while neither one of the circumferential roads are designed as limited access expressways.

¹¹ See article "Ningen Yorimo Osoi" [Slower than walking], in *Asahi Shimbun* [Asahi Daily News], 15 July, 1961, morning edition.

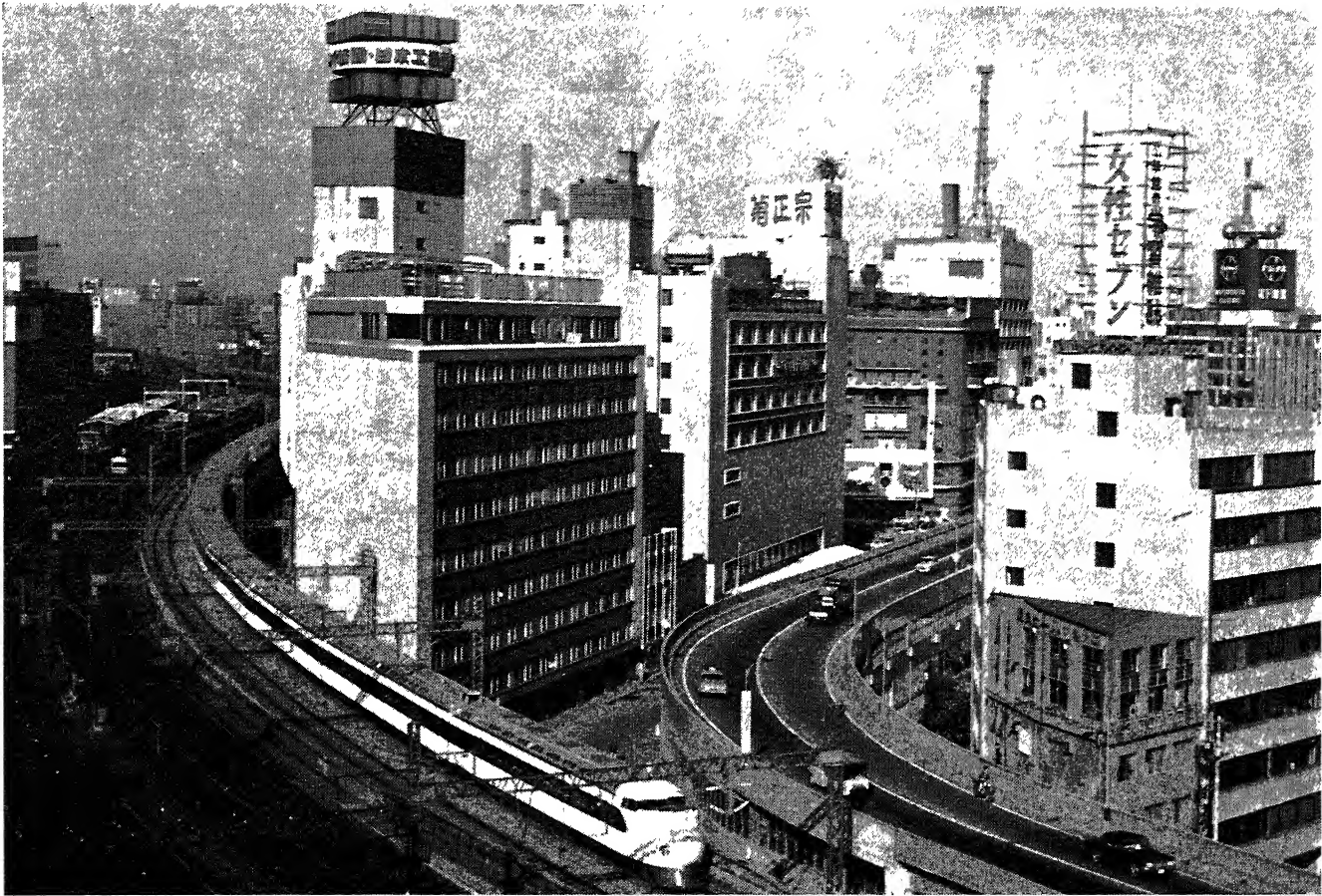
¹² Ryohei Kakumoto, *Toshi Kotsu* [Urban Transportation] (Tokyo, Kotsu Kyoryoku Kai, 1960), vol. 2, p. 26.

(Top right) Tokyo: elevated railways and express highways

The Super-Express train is the world's fastest, and travels at 210 kilometres per hour between Tokyo and Osaka. Both the highway and railway alignments shown here reveal the severe competition for land and the problems of co-ordinating land use and transport in metropolitan areas

(Lower right) Tokyo mass transport

Despite its enlarged and modernized facilities, the expanded metropolis, requiring intensive concentrations of workers at the centre in the daytime and a massive exodus to the suburbs at night, puts excessive strain upon its transport system, and a strain upon the finances and nervous systems of the commuters



Credit: Consulate General o Japan, New York



Credit: Consulate General o Japan, New York

All these facilities are planned and designed on the basis of traffic counts and origin and destination surveys which show the present pattern of passenger and vehicular traffic flow. The flow is then projected with adjustments by various methods and assumptions and the physical plant is planned to accommodate the forecast traffic. Sometimes the planned facilities are inadequate to meet future demand, but all represent attempts to accommodate, perpetuate and encourage the present trend and flow. To the extent they succeed, they will merely aggravate the problem. When it becomes easier to come in to CBD, more cars and people will come into it.

If the new facilities are of sufficient capacity to handle all future increases in traffic, that is a different matter. But many are known before construction to be woefully inadequate. The eight radial expressways are all designed to have four lanes and will be so constructed to make it impossible to add more lanes. Now the Yokohama-Tokyo Highway No. 3, to be built with access fully controlled, is designed as a six-lane highway. It will empty all its traffic at the city limits of Tokyo and the radial highway No. 4 with only four lanes is expected to receive all this traffic, and more originating within the city limits. Forecasts show traffic on this expressway will exceed its capacity very shortly after its completion.

Why not build a six or eight-lane expressway instead? All the expressways now being built or planned will run on elevated structures supported by columns built on existing streets, or are designed as depressed highways utilizing existing canal or moat alignments. This is because of the difficulty or impossibility of acquiring rights-of-way by buying private property. Thus because existing streets and canals are relied on to provide the rights-of-way, the new expressways can have only four lanes.

An improvement programme is extremely costly in a built-up area in any country. In Japan the situation is complicated because land values have been appreciating in many places by 20 to 25 per cent per year during the late nineteen-fifties.

In buying land public authorities must pay assessed current value plus a year's appreciation. The power of eminent domain under the present law requires a cumbersome procedure and is not often resorted to. But it is not just the law that makes it difficult to acquire private land for public use. So long as property values are appreciating so rapidly, property owners will be extremely reluctant to sell unless given another more desirable property in exchange. It is like living in a period of monetary inflation when nobody wants money in exchange for goods.

In a study conducted for the Public Housing Corporation, it was found that property values in commercial districts within 500 metres of suburban railroad stations diminish according to the distance from each station, the basic level depending on the minutes taken to get there from downtown Tokyo and on the number of passengers getting on and off at that station.¹³

¹³ Japan Housing Corporation, *A Study of Property Values* (1961).

Here then is a vicious circle. Better and faster subways and railroads and express highways are built to the heart of the city. About ninety minutes from the CBD is the limit of commuting distance. But new facilities will increase this radius, which means more people coming into town, and a need for more facilities. But more people also mean continuing appreciation of property values, which will make it more difficult to acquire the rights-of-way and physical facilities. They will always be saying that Tokyo is getting too big.

These arguments do not necessarily mean that all of the proposed construction projects should be cancelled. What they do indicate is there should be a drastic change in the logic of the plan.

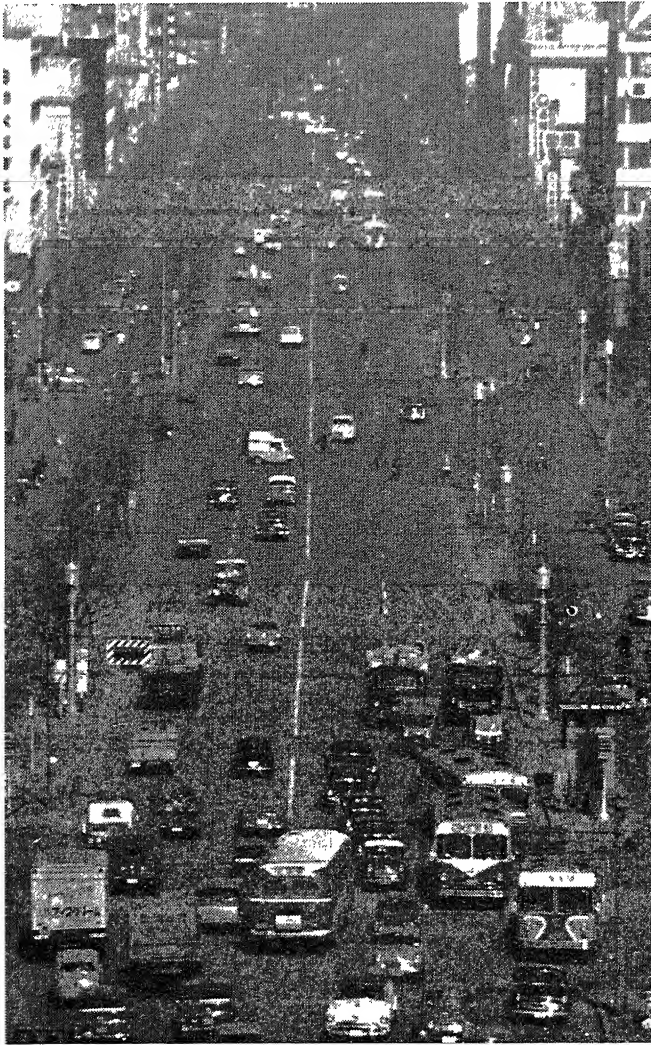
Whereas the physical transport facilities should be augmented and improved, there should also be a set of policies to prevent them from becoming an inducement for more business to establish in the CBD and for more people to commute there. The present structure of fares needs to be revised, being progressively raised as distances increase rather than proportionately lowered, as at present. There should be no discount for commutation and season tickets to and from CBD.

Charges for meter parking on the curb should be increased. The same principle should apply to tolls on expressways, as well as to parking garage charges. Collecting tolls downtown may raise a problem, for it may not be feasible to set up toll gates at the downtown ramps. Some system of monthly or periodic charges with stickers on car windows may have to be devised. But rates should be graded to penalize cars getting off the expressway on to congested streets.

The proposed Tokyo expressways have given the impression to the general public that, once constructed, Tokyo's traffic problems are solved. This attitude only compounds the problem. Tokyo needs a comprehensive traffic flow study—a study of not merely what the flows are but of what the flows should be. At present there is the danger that the huge investment in expressways is going to end up by merely giving Tokyo a system of useless structures, like the great wall of China, with no contribution to the solution of the traffic problem.

Appreciation of property values in downtown Tokyo must also be stopped, for otherwise the property owners will never give up their property, either to public authorities for city improvement or to other owners.¹⁴ Extremely inefficient use of land persists in Tokyo. Two-storey wooden structures in the heart of Tokyo around the Ginza still create fire hazards in addition to being an inefficient use of space. These owners will not sell because they think values will continue to go up, and they will not build permanent structures because that will not improve the profitability of the speculation. Some system of taxes to take away the whole increment has been proposed. But this will not be necessary if we can stop the

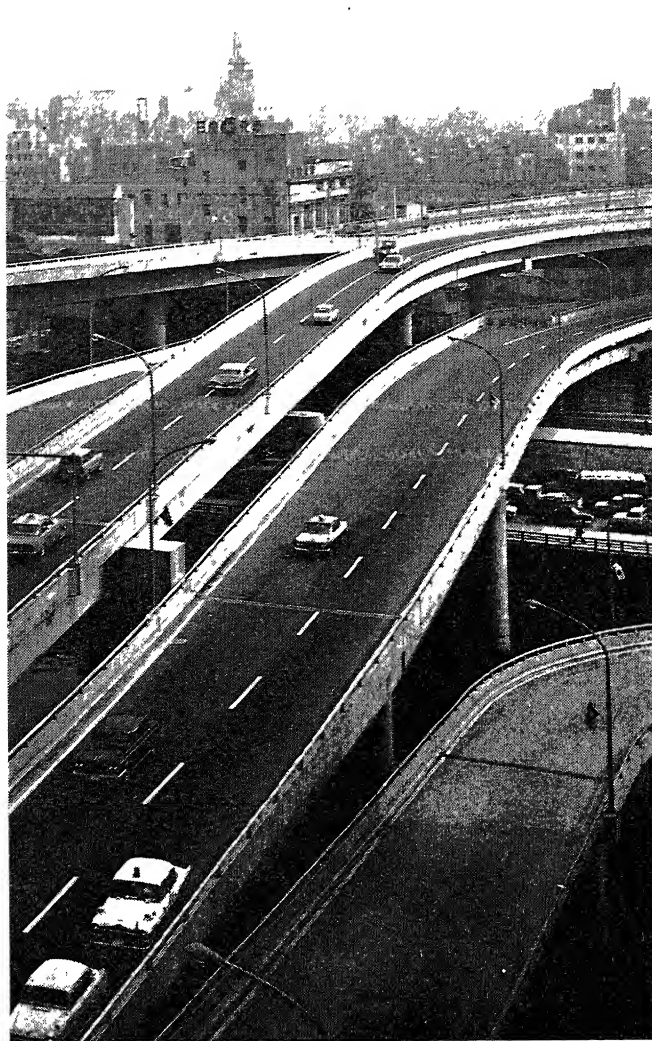
¹⁴ The index of urban land values shows that from March 1955 to September 1960, values more than trebled. This is the average. Generally the Tokyo values have gone up much more than the average.



Credit: Consulate General of Japan, New York

Osaka: automobile transport scene in Osaka

Vehicles play an increasing role in urban movement, but rapidly overflow the capacity of ordinary streets and highways



Credit: Consulate General of Japan, New York

Tokyo: express highways

To overcome vehicular congestion, new intricate structures are built. But these, too, quickly become overloaded, while creating acute demands for parking garages and encouraging more widespread dispersion of residential development

annual trend of more and more people coming to the CBD. A decreased commuter population means less sales for downtown stores, which in turn will stop or even reverse the appreciation of CBD property values.

It is not sufficient to make it more costly to come into town for, even though costly, the new facilities will make it more pleasant and faster to travel into the CBD. A more positive policy of encouraging business which is established in the CBD to move out to satellite towns is called for. Housing projects far out in the suburbs are well and good, and attract people to move out of more central locations, but cannot make them change jobs. The result is that these residential towns on the periphery

become mere dormitory suburbs, adding to commuter passenger mileage. Business establishments must be induced to move out. The only way to do this is to make it worthwhile to locate employment in the periphery rather than in the centre.

The problem of planning for Tokyo is indeed complex and poses numerous anomalies between cause and effect, as related to concentration and deconcentration, scattering and congestion, private action and public response. The problem is compounded because little is known about the most efficient forms of mass metropolitan areas and, more important, because men have not decided what form of city is best for them to conduct their lives.

Part five

NEW TOWNS PLANNING AND DEVELOPMENT

ECONOMIC PROBLEMS IN DEVELOPING NEW TOWNS AND EXPANDED TOWNS*

LLOYD RODWIN

THE BRITISH EXPERIENCE WITH NEW TOWNS

New towns have been built in many countries. But the building of new towns and expanded towns as an instrument of a national policy for urban development is a British invention. The basic ideas guiding the British New Towns policy were first broached by Ebenezer Howard. Letchworth and Welwyn, two experimental garden cities, were developed by Howard and his followers to demonstrate these ideas. Howard's proposal called for cities of limited size—approximately 35,000 to 60,000—comprehensively planned to ensure a balanced relationship between agriculture and industry; between residences, workplaces, shopping centres, and community facilities; between open spaces, recreation areas and varying scales of urban density. The community was to be self-contained. People were to walk to work and to be within walking distance of the countryside. But as cities approached the maximum size, new centres were to be formed; and a cluster of such cities was expected to provide the services which only a large metropolitan area can afford.

Howard's proposal was a reaction against the nineteenth century megalopolis. He objected to the growth of the big city at the expense of the countryside, the crowding and noisome slums, the increasingly long and excessive journey to work, the presumed unearned increment of the landlord, the rootlessness, dislocation and social problems of the migrants from rural areas. In the fifty years after the book was written other developments occurred in Britain which exacerbated the problem and culminated in the British new towns policy.¹ The housing boom after World War I produced dreary miles of housing built often without any sensible relationship to work areas and shopping facilities. Similarly, trading estates or planned industrial areas, devised for regions suffering from economic dislocation and high unemployment, paid little attention to basic community requirements. Unplanned growth along transportation routes, so-called ribbon development, led to traffic congestion, the loss of good agricultural land and the rape of the countryside. London's disproportionate growth in comparison with

the rest of the country contributed to the growing interest in encouraging expansion elsewhere in Britain. The military vulnerability of the capital city tended to reinforce these fears.

Many, if not all, of these problems may be found in developing areas, and therefore, the measures Britain adopted to cope with the situation are of special interest. The first decisive step was the establishment in 1939 of the Royal Commission on the Distribution of the Industrial Population.² Headed by Sir Montagu Barlow, the Commission focused public interest on these problems and published an historic report which provided the foundation for the new towns Policy. The chief recommendations were for a Central Planning Authority and for the adoption of measures to curb the growth of London and to encourage planned development elsewhere in Britain. The destruction of cities during World War II underlined the need for the development of a post-war reconstruction policy and created a mood of expectancy. When the new towns ideas attracted the attention of influential members of the Labour Party, and, eventually, were introduced as legislation by the triumphant Labour Government, it had the qualified approval of the Conservative Opposition. With the official enactment of the New Towns Act by Parliament in 1946, Britain had developed, for the first time in contemporary western history, a national policy for urban development.

The aims were to build comprehensively planned cities to curb the growth of London and to provide a more effective pattern and method for metropolitan growth. Unlike the past, the community was expected to be more than the end product of many independent private and public decisions. The character of the community was to be set in advance with private as well as other public developers participating within the framework and guidelines set by the corporation.

To carry out this programme, separate public development corporations were formed to build the different communities. The corporations acquire the land, make the plans, and hire contractors to put up most of the houses and shops, and many standard industrial plants.

* Background Paper No. 4 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August to 7 September 1964.

¹ Most of the information in this section is based on L. Rodwin, *The British New Towns Policy* (Cambridge, Harvard University Press, 1956).

² *Report of the Royal Commission on the Distribution of the Industrial Population*, Cmd, 6153 (London, H.M.S.O., 1940). For a much more detailed evaluation of the origin of the British New Towns Policy, see L. Rodwin, op. cit., ch. 2.

They also have the power to build sewer and water facilities, but otherwise do not do jobs normally handled by local authorities. If the local authorities perform some service for the development corporations, arrangements for reimbursement are negotiated. What the corporations do not do directly or through their contractors, they attempt to stimulate, schedule or co-ordinate. This role is particularly important to assure adequate and timely provision of utilities, roads, schools as well as certain social facilities and private developments.

Not all the towns are new towns. Hemel Hempstead expanded an ancient borough of 20,000 persons. Welwyn Garden City, one of Howard's original demonstration projects, was converted into a New Town to accommodate the industrial expansion anticipated in that region. Stevenage started with a population of 5,000 persons, many of whom initially objected to the transformation of their community. But most of the towns were intended to serve the policy of decentralizing London, the capital city. Other functions developed, however. Basildon, for example, although in the London area, was also expected to repair the ravages of the shoddy speculative subdivisions in Essex. Corby new town was initiated to handle the tremendous growth of a gigantic steel plant. Peterlee was to be a community with modern facilities for miners to remedy the primitive villages which were their habitual lot. And Newton Aycliffe started as an effort to keep an isolated war plant in operation after the war by providing suitable housing and community facilities nearby.

New town physical design and development policies differ in a number of ways: in their varying sizes, their economic activities, their approach to neighbourhood modules, their choice of building types, their emphasis on contemporary design, and the like. Yet, the towns have enough in common to warrant broad characterization. Typically, most are relatively small, ranging in proposed population from 20,000 to slightly more than 100,000, with 60,000 to 80,000 persons representing the modal size. The residential areas are generally divided into several neighbourhoods of approximately the same size, each containing one or more primary schools, shopping areas and different kinds of playfields, and all are grouped around the principal town centre. Secondary schools are usually between neighbourhoods, close to the main circulation system. The industrial areas, served by rail and road connexions, are close to routes which pass near the town centre. Ring roads circle the town with secondary roads connecting the principal neighbourhoods and districts. Smaller, and often curved, streets knit together the neighbourhoods. As a rule, the neighbourhood and town centres rely on access by pedestrian and public service routes; but there is increased concern about making better provision for the car. The shape of the towns is irregular, and generally not easily distinguished except from the air or by reference to maps. Open space abounds. Densities for most towns are relatively low, ranging from about twelve to eighteen houses an acre. Because of criticism, high costs and the desire to achieve a more urban setting, there appears to be an inclination

to increase the densities as well as the size of neighbourhoods or residential sectors especially near the town centre; and emphasis is generally being placed on highly compact town centres to heighten the sense of urbanity.

The managers of most new towns stress the early development of their industrial areas since they wish to avoid bedroom developments. It takes more time to organize an industrial area than to build a neighbourhood. Industrial areas are generally insulated from residential areas, even when factories are not objectionable on the grounds of smoke, noise, dirt or appearance, because of traffic considerations. However, in certain cases, as in Cumbernauld, Scotland, small-scale industries with low nuisance effects are being encouraged to locate in residential areas, usually where modest-sized firms can occupy small amounts of space.

Although new towns development corporations work out freehold and leasehold arrangements, they prefer to offer ninety-nine year leases for firms wishing to do their own building. Sales are infrequent, most often to large, established firms requiring considerable amounts of land. Almost all new towns build standard factories for small and medium-sized firms preferring to rent. Such facilities are quite attractive to organizations with limited capital. In general, well-planned industrial areas with utilities, housing and modern community facilities plus good communications and easy access to a large market are appealing to many firms.

From the point of view of the community, the shopping districts and town centres (with offices, cultural facilities, shops and entertainment zones and transportation foci) are the most profitable features of the towns. These are the uses which tap the income and reflect the values created by the new community. In these areas rents are generally set by competitive bids, sometimes coupled with percentage leasing arrangements geared to the volume of sales or income.³

Aside from certain special subsidies, the towns are expected to meet all costs and to provide "a return which is reasonable having regard to all the circumstances".⁴ The corporations cannot borrow funds independently. Sixty year loans are made by the central Government at interest-rates from 3 per cent to more than 4 per cent. Repayments on capital, but not interest, can be deferred the first five years. Subsidies are also provided for the first two years to cover part of the initial organizing expenses. The unsubsidized portion—50 per cent the first year and 75

³ See W. O. Hart, "The development of new towns", *Report of Proceedings. Town and Country — Planning Summer School*. Bangor, 1952 (London, Town Planning Institute), p. 65 and United Nations, Technical Assistance Administration, *Public Administration Problems of New and Rapidly Growing Towns in Asia* (Sales No.: 62.II.H.1), pp. 8 and 9. The period of the lease varies from ninety-nine years to a shorter period of twenty or sixty years. In the United Kingdom, an element of flexibility has been introduced recently for shops in the central area in the new towns through prescribing a shorter lease period for small shops and a longer lease period for large shops involving a low heavy initial investment. In the case of the latter, a low rent is charged in the initial years but provision exists for a progressive increase in rent as profits increase. Cf. also, W. Bredo, *Industrial Estates, Tool for Industrialization* (Glencoe, The Free Press, 1960), ch. 4 and 5.

⁴ *New Towns Act*, 1946.

per cent the second year—is added to the capital costs of the project. The traditional local as well as national subsidies for housing are also paid by the central Government.

The general hope is that the higher returns from commercial and industrial sites will balance the deficits incurred while the costly overhead facilities are provided and the town's development proceeds slowly. Returns during this period are minimal; but as the initial site development hurdles are overcome and the town's growth is assured, the income from increased population and rents are expected to mount, the deficits to disappear and the assets to appreciate in value. Development has already reached this stage in many towns, and is a tribute to the ability and imagination of the initiator.

Certainly the towns could not have been started at a more inauspicious period. The post-war defence programmes imposed demoralizing shortages and delays on a dangerously long development period. Certain errors and teething difficulties resulting from inexperience, conflicting policies and cautious overcentralized administration added to the complications. For a while, there was some justified apprehension whether the towns would ever be completed. But Great Britain's improved economic position coupled with the successful handling of the site development programmes altered the mood and the prospects. Development in most of the towns is now proceeding far more satisfactorily. There is every reason to believe they will reach their target population within the next few years and that they will produce attractive revenues. Indeed, if the Government so desires, it may even be possible in the future to negotiate private financing of later stages of development of most of the new towns on the basis of their assets and income earning potentials. Recognition of these facts led to the decision in 1962 to designate three new towns (Dawley near Birmingham; Skelmersdale near Liverpool; and Livingston near Edinburgh) and to the submission of additional proposals in 1963 for three more new towns (at Redditch near Birmingham; at Runcorn near Liverpool; and on a site to be selected near Manchester).

When the Conservative Party returned to office in Britain in 1952, there was some concern lest the new towns policy be scuttled. The fears proved unfounded. But the new Government did decide not to build any more new towns at that time. Instead it proposed to extend the programme in a different direction, sanctioned in the Town Development Act of 1952. This legislation provides for the extension of financial and perhaps technical assistance to smaller communities for those land improvement costs (sewers, water, land drainage, and site preparation) which result from the community's rapid expansion in absorbing the overspill population from congested areas. These crowded metropolitan areas, unable to expand because of their limited space and the maximum densities set by their physical development plans, were asked to negotiate agreements with small communities in neighbouring areas to serve as receiving centres for excess population. Although there is no special provision to ensure that industries move with the

population, the aim is to develop communities rather than dormitory settlements.

The agreements vary, but in general they fix the amount and kind of development, the specific reception areas, whether the exporting or reception authority will do the building and subject to what conditions, the financial assistance that will be given by the exporting authority or authorities, by the county council, etc. When agreement in principle is reached, a preliminary scheme may be prepared and submitted to the Ministry. It would describe the proposal, the physical plan, the probable costs, the assistance to be rendered by the other authorities and the estimated effect of the programme on local finances. On the basis of this information a preliminary commitment on the scale of the Exchequer's contribution would be negotiated. The amount of assistance varies with the circumstances. Generally, the congested areas are expected to pay the traditional local authority housing subsidies to the receiving areas for a period of approximately ten years in return for the right to nominate tenants.

The town development programme has added another string to the bow of British planners in dealing with the problems of metropolitan growth and resettlement. Local authorities plan for their own growth and deconcentration. No new agencies are created, but the powers of existing agencies are increased. It also offers financial incentives to encourage negotiation between congested metropolitan areas and their neighbouring communities. The minister has power to compel agreement if local areas prove unreasonable, although it is hoped this will not be necessary. The subsidies which the central Government makes available are expected to sweeten the prospects sufficiently to induce local communities to co-operate.⁵

Schemes affecting more than fifty towns have been initiated. To date, however, progress has been discouragingly slow. Negotiations are often excruciatingly time-consuming and in almost half the cases come to naught. Time elapsed between the start of negotiations and the commencement of housebuilding for Greater London schemes range from one to seven years, for example. By the end of 1962, a little more than 13,000 local authority houses were completed in expanded towns of Greater London; almost 6,400 in Staffordshire (Birmingham, Walsall and Wolverhampton); and 5,600 elsewhere.⁶ However, the pace of the programme is expected to expand substantially in the future.

OTHER NEW TOWNS PROGRAMMES

None of the countries outside of Great Britain (and perhaps the Netherlands) has devised a systematic national policy for the building of new towns. This situation may change in the more developed countries where there is increasing concern about national patterns

⁵ L. Rodwin, op. cit., ch. 8 and 9. See also G. D. M. Block, *The Spread of Towns* (London, the Conservative Political Centre, 1954).

⁶ Great Britain, Ministry of Housing and Local Government, "Town development, collected background information" (unpublished data).

Table 1. Type, location, population, size, industry type and estimated capital expenditures of designated and proposed British new towns as of December 1962 or June 1963^a

Name	Type ^b	Location ^b	Proposed population ^c	Designated area (acres) ^d	Industry type	Estimated capital expenditures by DCs and NTC ^d
<i>London region</i>						
Basildon, Essex	New town — satellite of London	30 miles east of London	86,000 106,000	7,818	Varied including tractor production	26,500,000 41,960,000
Bracknell, Berkshire	New town — expanded satellite of London	28 miles west of London	Undecided 50,000-60,000	3,296	Varied	9,207,800 17,567,300
Crawley, Sussex	New town — expanded satellite of London	30 miles south of London	62,000 70,000	6,047	Varied	20,000,000 33,750,000
Harlow, Essex	New town — satellite of London	23 miles north of London	Undecided 80,000	6,395	Varied	26,050,000 44,640,000
Hatfield, Hertfordshire	New town — expanded satellite of London	20 miles northwest of London	26,000 29,000	2,340	Varied	6,300,000 9,400,000
Hemel Hempstead, Hertfordshire	New town — expanded satellite of London	29 miles west of London	65,000 80,000	5,910	Varied	22,700,000 36,100,000
Stevenage, Hertfordshire	New town — expanded satellite of London	30 miles north of London	60,000 80,000	6,156	Varied	21,250,000 38,000,000
Welwyn Garden City, Hertfordshire	New town — expanded garden city satellite of London	22 miles north of London	42,000 50,000	4,317	Varied	9,000,000 17,550,000
<i>Other English new towns</i>						
Corby, Northamptonshire	New town — expanded, isolated	80 miles north of London	55,000 75,000	2,696	Steelworks and varied	10,500,000 13,000,000
Newton Aycliffe, County Durham	New town — isolated	12 miles south of Durham	15,000 20,000	865	Varied, based on existing World War II war plant	7,049,000 9,169,000
Peterlee, County Durham	New town — isolated	10 miles east of Durham	25,000 30,000	2,350	Mining, textile, clothing	6,971,700 10,075,100
<i>Wales</i>						
Cwmbran, Monmouthshire	New town — isolated	18 miles northeast of Cardiff, Wales	45,000 55,000	3,160	Steelworks close by and varied	8,110,800 12,746,500
<i>Scotland</i>						
Cumbernauld, Dunbartonshire	New town — satellite of Glasgow	15 miles northeast of Glasgow	Undecided 70,000	4,150	Varied	4,913,000 8,156,000
Glenrothes, Fifeshire	New town — satellite of Edinburgh	20 miles north of Edinburgh	32,000 50,000-55,000	5,730	(Coal mine now closed) Varied	5,976,000 8,782,000
East Kilbride, Lanarkshire	New town — expanded satellite parish of Glasgow	9 miles south of Glasgow	Undecided 70,000	10,250	National engineering laboratory and varied	17,901,100 25,063,200

Name	Type ^b	Location ^b	Proposed population ^c	Designated area (acres)	Industry type	Estimated capital expenditures by DCs and NTC ^d
<i>Recently designated and proposed new towns</i>						
<i>England</i>						
Dawley, Shropshire	New town — expanded satellite town of Birmingham	30 miles northeast of Birmingham	70,000 90,000	9,100	—	—
Redditch, ^f Worcester and Warwick	New town — expanded satellite town of Birmingham	15 miles south of Birmingham	70,000 ^g 90,000 ^h	7,200	Existing engineering and varied metal goods	—
Runcorn, ^h Cheshire	New town — expanded satellite town of Liverpool	14 miles east of Liverpool	70,000 ⁱ 90,000 ^j	7,750	—	—
Skelmersdale, ^h Lancashire	New town — expanded satellite of Liverpool	13 miles north of Liverpool	60,000 80,000	4,000	—	—
<i>Scotland</i>						
Livingston, ^h Midlothian and West Lothian	New town — satellite of Edinburgh	15 miles west of Edinburgh	—	6,692	—	—
<i>Private and county council sponsored</i>						
Cramlington, ^g Northumberland, England	New town — expanded satellite village of Newcastle	8 miles north of Newcastle	— 48,000 (1978)	Approx. 2,560	Comprehensive plan with provision for new industry. Collieries in vicinity	—

^a "Progress of new towns to December 1962," *Town and Country Planning* (London), vol. XXXI (January, 1963), pp. 32-33.

^b Great Britain, Ministry of Housing and Local Government, *The New Towns* (London, Her Majesty's Stationery Office 1963).

^c Two figures are given. The first figure is the population size when it is proposed to stop "importing" people and jobs. The second figure is the ultimate population to be reached by natural increase for which the town is planned.

^d Two figures are given. The first figure is the estimated capital expenditures for housing since designation to 31 December 1962. The second figure is the estimated total capital expenditures (including housing) to 31 December 1962. DC — Development Corporation. NTC — New Towns Commission.

^e "Current practice notes," *Journal of the Town Planning Institute*, (London), vol. XLIX (March, 1963), pp. 77-78. Cramlington is being developed by private enterprise in co-operation with the local authorities.

^f Great Britain, Ministry of Housing and Local Government, "New Towns Act 1946: draft Redditch New Town (Designation) Order 196 Explanatory Memorandum" (London, September 1963) (mimeographed).

^g Possible population.
^h Great Britain, Ministry of Housing and Local Government, "New Towns Act 1946: draft Runcorn New Town (Designation) Order 196 Explanatory Memorandum" (London, The Ministry, September 1963) (mimeographed).

ⁱ Proposed population in fifteen years.

^j Possible population in thirty-five to forty years.

of physical development and where initial attempts are already underway to control the pattern of urban and regional development. France's current efforts to curb the growth of Paris, Italy's in relation to Rome and the North, and Japan's in relation to Tokyo and Osaka are some examples. In the United States the problem of the mushrooming suburbs, and in particular, the extraordinary growth of population anticipated in California, has prompted exploration by the Federal Government, by the Ford Foundation and by the University of California (Berkeley) of the desirability and problems of devising a new towns programme. There are also a few large private developers who are building the equivalent

of new towns. Despite the increasing activity, however, no national new towns policy has yet emerged, or is immediately in the offing either in Europe or the United States.

None the less, many new towns have been or are being built. In target population, they range from about 7,500 to 650,000. Like the towns in Britain, their functions vary. One frequent aim is to provide urban facilities for enterprises engaged in resource or mineral development. The well-known examples are Kitimat, the new town planned by the Aluminum Company of Canada, located some 400 miles north of Vancouver on the British Columbia coast of Canada; and Shilal, the Indian steel

Table 2. British new town development schemes ranked in order of production of houses as of 30 June 1963^a—except as noted

Rank	Name	Houses completed		
		By corporation	By private enterprise	Total
1	Harlow	15,101	529	15,630
2	Crawley	11,178	1,789	12,960
3	Stevenage	11,564	419	11,983
4	Hemel Hempstead	10,714	1,011	11,725
5	Basildon	11,261	427	11,688
6	East Kilbride ^b	8,520	73	8,593
7	Welwyn Garden City	5,042	229	5,271
8	Bracknell	5,018	57	5,075
9	Cwmbran	4,761	255	5,016
10	Corby	4,892	81	4,973
11	Newton Aycliffe	4,203	43	4,246
12	Peterlee	4,208	15	4,223
13	Hatfield	3,397	114	3,511
14	Glenrothes ^b	3,476	17	3,493
15	Cumbernauld ^b	1,207	1	1,208

^a Great Britain, Ministry of Housing and Local Government, "New Towns: Quarterly Progress Report: Summary" (London, no date).

^b "Housing in the new towns to December 1962," *Town and Country Planning* (London), vol. XXXI (January, 1963), p. 30. Note that "houses completed by corporation" also includes housing completed by the local authority.

Table 3. British expanded town development schemes ranked in order of production of houses as of 31 December 1962^a

Rank	Expanding town	Expansion related to	Houses completed
1	Swindon	London	5,366
2	Worlsey	Salford	3,438
3	Wednesfield	Wolverhampton	2,450
4	Bletchley	London	1,881
5	Seisdon	Wolverhampton	1,523
6	Luton R.D. ^b	London	1,396
7	Warmley	Bristol	1,000
8	Aylesbury	London	819
9	Frimley and Camberley	London	762
10	Luton Borough	London	646
11	Keynsham	Bristol	642
12	Ellesmere Port	Liverpool	529
13	Haverhill	London	466
14	Canvey Island	London	414
15	Tamworth	Birmingham	408
16	Thetford	London	395
17	Aldridge	Birmingham	360
18	Brownhills	Birmingham	287
19	Cannock	Birmingham	276
20	Daventry	Birmingham	275
21	Others	—	2,150

^a Great Britain, Ministry of Housing and Local Government, *Town Development: Collected Background Information* (relating to all town development schemes, i.e., London, Birmingham, Manchester, Salford, Liverpool, Wolverhampton, Walsall, North-East, Bristol) (London, no date).

^b Rural district.

town, located close to good quality iron ore and unexploited reserves of coal, on the main railway line between Bombay and Calcutta.

Other new towns started with a special purpose although their functions can be expected to change over time. Faridabad, some seventeen miles south of New Delhi, was built to accommodate the refugees resulting from the partition of India in 1947. Beersheba, in Israel, a focal point of the Negev region, is expanding a small Bedouin market town. Tsuen Wan, eight miles to the west of Kowloon (a boom town which has grown from fifteen villages housing 6,000 persons in 1949 to a population of 80,000, mostly squatters and refugees) is making a belated effort to transform itself into a self-contained community supporting itself largely by textiles, banking and films. Emmen, in Northeast Holland, will establish a new centre of employment to relieve the declining peat industry and arrest movement to the large cities of western Holland. Similarly, the need to have urban centres, such as Emmeloord in Holland for the farmlands reclaimed from the sea, or the provision of a new facility such as the creation of harbours in Eliat or Ashdod, Israel, or the building of a new capital city, as in the case of Brasilia, Islamabad or Chandigarh, provide the *raison d'être* for the town.

Increasingly, however, the decentralization of congested metropolitan areas is becoming the principal spur for the development of new towns. Tema, Ghana's port city and satellite town, seventeen miles east of Accra, Petaling Jaya, Malaysia's new town six miles from Kuala Lumpur, Bramalea, located twenty-six miles northeast of Amsterdam, and Farsta and Vallingby, Stockholm's two nearby suburban cities, are examples. So, too, are Cramlington, eight miles north of Newcastle, England, Elk Grove Village, about twenty-five miles from Chicago, and Reston, eighteen miles from Washington, D.C., all new towns largely under private auspices. Towns built at a great distance from the big city may also serve this purpose. One example is Ciudad Industrial Bernardino de Sahugan, a new town being built by the Mexican Government to slow the growth of Mexico City—some sixty miles away.

Even Santo Tome de Guyana, located about 400 miles from Caracas on the confluence of the Orinoco and Caroni rivers in southeastern Venezuela and probably the largest industrial new town being developed in the world today, is expected not only to create a major new growing point in Venezuela and to diversify the Venezuelan economy but also to relieve some of the pressures produced by migrants moving to Caracas, the capital city. Since concern about the giant metropolis is growing in all parts of the world, satellite cities designed to channel and decentralize metropolitan expansion will probably prove to be the most significant form of new town development in the future, however much the specific circumstances and problems may vary. Such satellite cities will grow at a faster pace. Their economic activities, because of linkages to the commercial metropolis, will doubtless be more diversified and far greater in scale than the resource or special-purpose towns.

As one might expect, there are marked similarities and differences between the British new towns and those in other parts of the world, especially in developing countries. For example, financial methods vary. In Britain, long-term credit at low interest rates is available from the Treasury. Elsewhere, in addition to loans from central and state governments, methods range from private industrial financing coupled with assistance from public development agencies to investment by municipal banks and insurance agencies, use of social security and super-annuation funds, lotteries, and national capital budgeting as part of the national development plan. Variety of financing methods, however, is not necessarily an advantage if it fails to provide the resources required for a successful programme. Only the British and possibly the Indian approaches have satisfied this requirement, albeit not without difficulties. Even the British are beginning to consider whether private financing might not be arranged at later stages when the success of the new towns appears assured.

Industrial areas of new towns in developing countries, as in Britain, are in planned districts, usually well served by road, rail, water, power and even with factories built to serve varying sizes and standards. These services are essential to attract entrepreneurs who are reluctant to invest in an uncertain environment. This is vital in developing areas where the risks and misgivings are magnified. Indeed, even more than in Great Britain or other countries with advanced economies, small firms tend to prefer locations in central areas of large cities. This is largely because of external economies: the existence of linkages, the availability of cheaper accommodations, a wider range of skills, easier credit arrangements, a larger market, and greater flexibility in adjusting in the large city to the numerous, and often unpredictable, vicissitudes of the market.

In British new towns most of the land is owned by the community. This is important in so far as industrial centres and town centres are concerned, since they are generally the most profitable areas. But in Hoogvliet, Holland, the town centre is being financed by private enterprise, on land sold to an industrial firm, which regards this as a good investment for its pension funds.

Roads play an equally, if not more, decisive role in developing countries in determining the location of industries and especially of commercial activity. But property in public ownership in such countries lends itself more easily to invasion by squatters so that land-use controls on rights of way, for example, are all the more difficult to enforce.

Still another problem, made more complex in developing areas, is the staging of the city centre. This question is not an easy one to solve since in the early period of development the city cannot support the size, quality or variety of shops (not to mention other public facilities) that a large city can afford. On the other hand, if care is not exercised when neighbourhood shopping facilities are provided, one of these initial shopping areas may burgeon into the principal business centre; or the local centres, by

dividing the market, may inhibit the growth of any real central business district. The preferred strategy is to limit growth of neighbourhood centres as early as possible. Unfortunately, it is rarely easy to hold land off the market for the business centre, or to avoid relatively inflexible and expensive infrastructure commitments. Moreover, to limit commercial development at any time and especially in developing economies, is bound to spark controversy and resentment, not to mention critical burdens of control for a weak administrative apparatus.

Neighbourhood units are still popular in most new towns. Recently, however, there appears to be a disposition, as in Cumbernauld, to question the neighbourhood concept in developing countries as well as Great Britain and to favour the building of larger residential areas to foster more interesting and specialized town centres and more intensive uses of community facilities. The British towns, at least in principle, have sought to encourage some variety of social composition (income, occupation and education) in the towns and even within neighbourhoods. Partly because of high rents and ingrained social values, they have only partially succeeded. However, in new towns in developing areas the goal of heterogeneity within residential areas appears equally, if not more difficult to accomplish because of sharper differences in values and living patterns.⁷

Perhaps a more typical and far more dramatic problem in planning the residential segments of new towns in developing countries is how to organize reception areas where migrants can come. They must be permitted to build their houses somewhere and provision must be made for minimum services such as water and sanitary facilities. They must also be assured the prospect of obtaining security of tenure and even some technical assistance in building and in obtaining credit and materials if the development agency wishes in turn to exact some adherence to minimum space standards and possibly co-operative building arrangements. Failure to provide such reception areas and to devise clear-cut policies to accommodate migrants leads to squatting, thus sowing the seeds for legal, economic and social complications.

LESSONS AND PROBLEMS

At existing prices, the cost of infrastructure, housing and industrial facilities for modest-sized new towns of about 50,000 to 100,000 population may range between 90-100 million dollars. A very large proportion of this sum must be invested in the early years.⁸ For all new towns, whether in developing countries or mature economies, this creates critical financial problems in servicing

the fixed charges on investment. These outlays are inescapable. They are generated by the required investment in basic infrastructure (water, sewerage, roads, electricity, etc.) until enough industries, shops and families arrive to assure an adequate income. Only a handful of private corporations have the resources to survive such a long development period, not to mention the sureness of purpose to avoid dangerous compromises between long- and short-term costs.

The key to success is to build quickly and efficiently, to encourage concentrated rather than scattered development, to minimize infrastructure costs, and to obtain liberal government credit with arrangements for delayed payments during the early development period coupled with subsidies to cover initial organizing expenses and part of the costs of housing for moderate and low-income families. Perhaps most important of all, however, is the need to recapture increased land values by an effective tax and land tenure policy. Unfortunately, most developing areas lack an effective local tax system; and leasing may often create problems in these countries since mortgaging the freehold is generally the prerequisite for arranging the financing of the improvement. The alternatives are either to take over more of the risk and responsibilities of development or to jeopardize the most likely and attractive source of revenues for the enterprise.

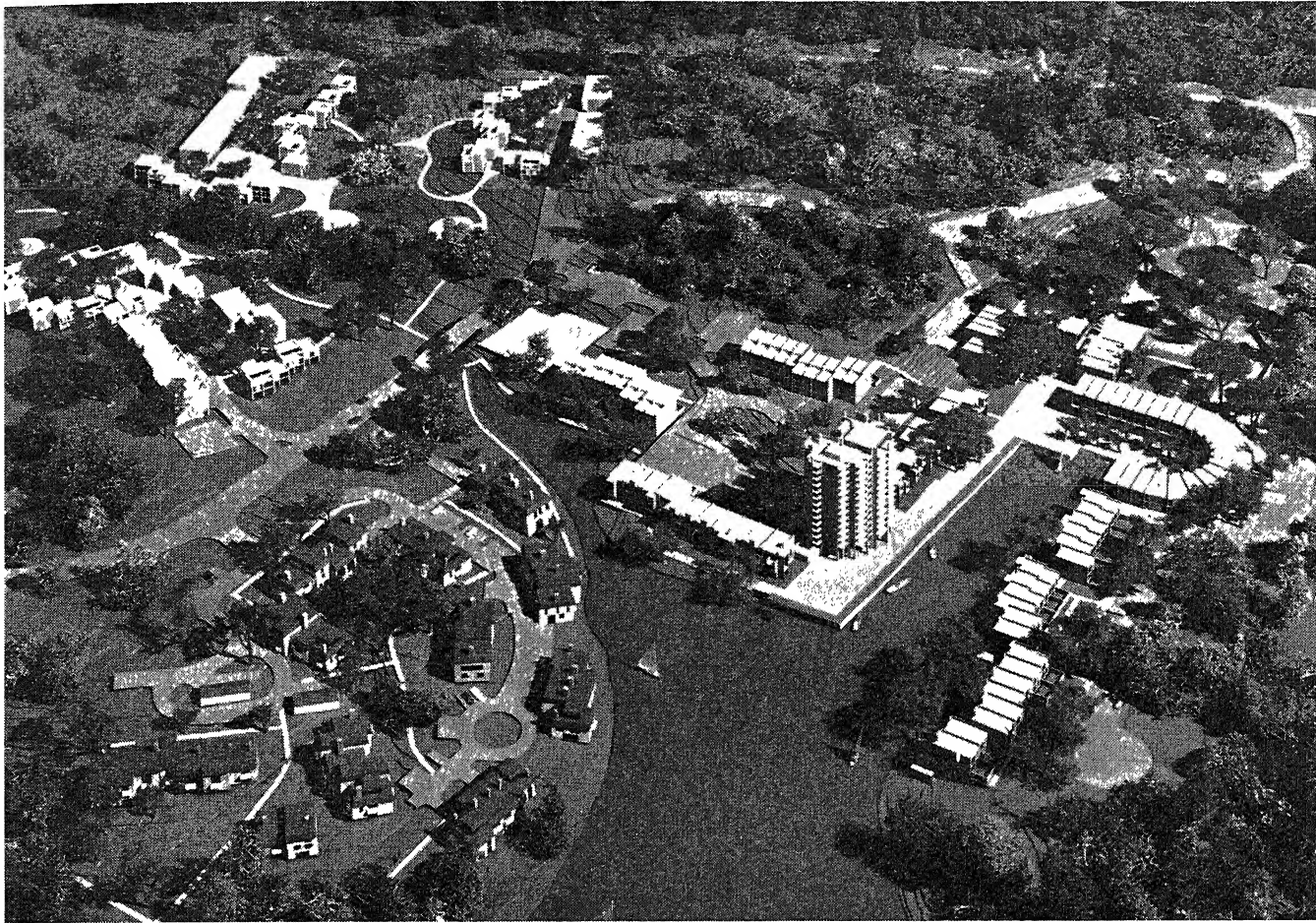
Another problem is the need to co-ordinate the staging of development; the organization of economic activities and the provision of public services, housing and of community and shopping facilities. Imbalances can cause harrowing difficulties.⁹ If the rate of growth is slow, the financial burden may become dangerously high. If it is too rapid, provision of services may not keep pace. If the economic activities are established before the housing is available, recruitment sags. If houses are provided first, they may remain vacant; or if occupied, they may require long journeys to work. If the need for land is great and the administrative machinery weak, sites for future public facilities may be an open invitation to squatters. If the infrastructure is provided in advance for the whole town, or large segments thereof, considerable waiting costs may be entailed until development catches up. And if, as already noted, neighbourhood shopping facilities are provided as neighbourhoods are built, the town centre may never acquire the intensity or distinction desired; but if the facilities are delayed or not provided, inconvenience and discontent is the lot of the inhabitants during the first decade. What is more, since no developer, public or private, can provide all of the essential facilities, the phasing of the programme is constantly at the mercy of other agencies and groups whose co-operation must be obtained via bargaining, suasion, threats and other means.

Still another critical issue is how to create—especially

⁷ See L. Rodwin, *op. cit.*, ch. 6; United Nations, Technical Assistance Administration, *op. cit.*, pp. 12-13 and 21. For examples of departures in thinking about the neighbourhood concept, see Cumbernauld Development Corporation, "Cumbernauld new town preliminary planning proposals" (Cumbernauld, The Corporation, 1958). See also, London County Council, *Hook*, The planning of a new town, date and design based on a study for a new town of 100,000 at Hook, Hampshire (London County Council, 1962).

⁸ E. Layton, "Administration of new towns in the United Kingdom, the Netherlands and Canada", in United Nations, Technical Assistance Administration, *op. cit.*, pp. 86-87.

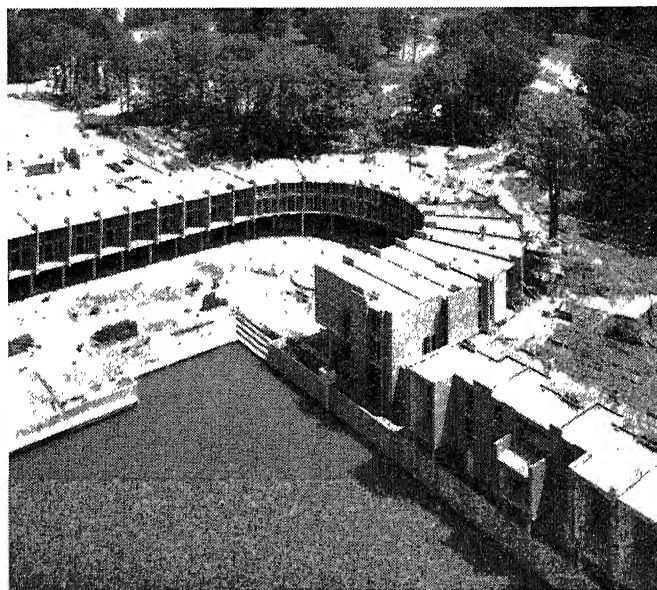
⁹ For some further details, see L. Rodwin, *The British New Towns Policy*, *op. cit.*, ch. 5, 6 & 7; "Industry builds Kitimat — first complete new town in North America", *Architectural Forum* (New York), vol. 101, July, 1954, pp. 128-147; and E. Layton, *op. cit.*, pp. 82-83.



Credit: Louis Checkman

Reston, Virginia, United States of America

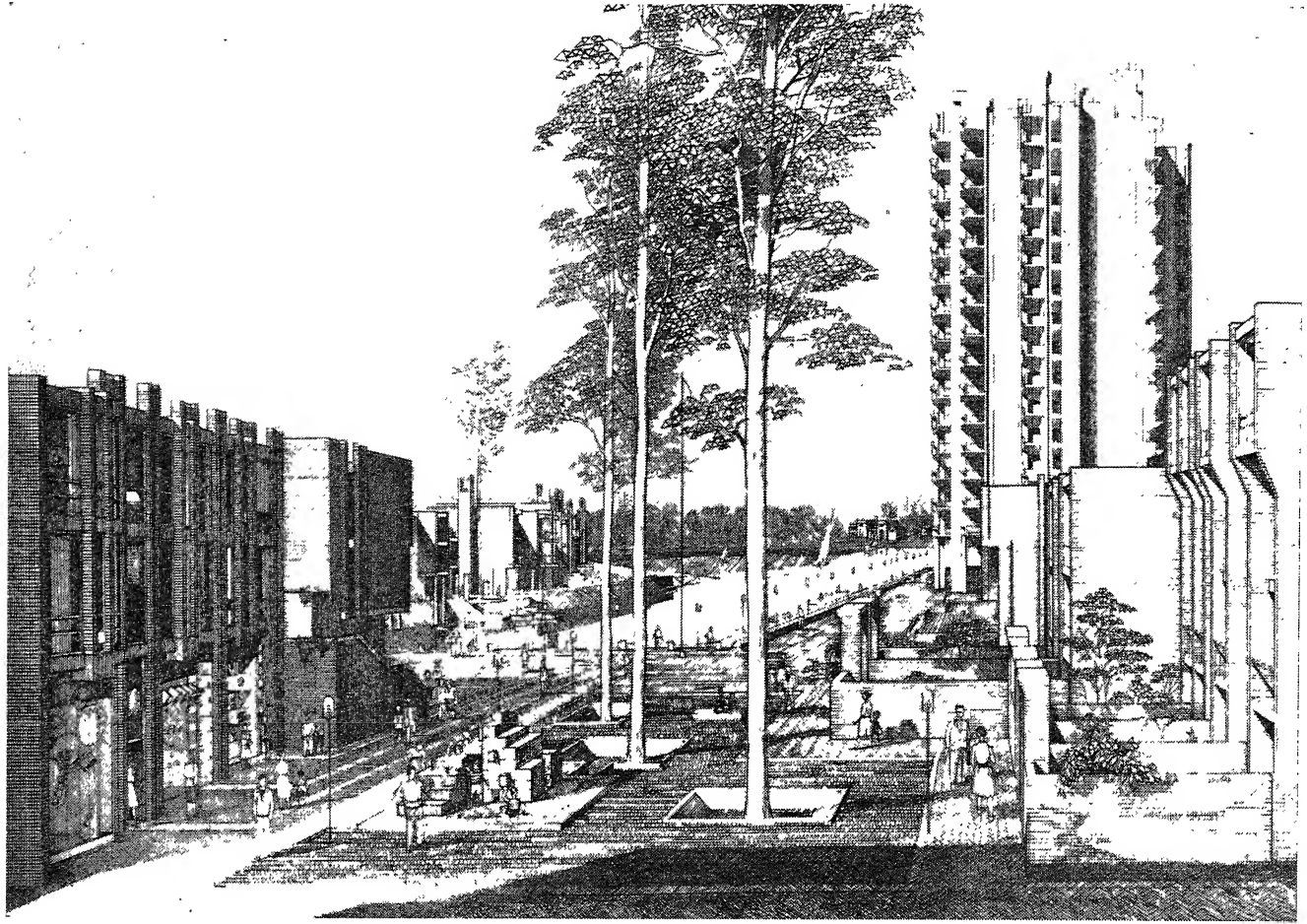
The first neighbourhood of a privately developed satellite new town, 16 miles from Washington, D.C., will group some 10,000 residents into compact clusters of town houses, as well as one high-rise apartment building and single-family residences. The clustering will permit retention of large natural areas and accent the public spaces. The design centres upon an inlet of new Lake Anne and brings small boats into the centre of the neighbourhood. Automobiles are restricted to the periphery of the centre, emphasizing pedestrian—and social—integrity



Reston Plaza

Town houses and public facilities are shown under construction. With an architectural and social unity centred upon the plaza, an urbane atmosphere is created in a location normally destined for suburban monotony

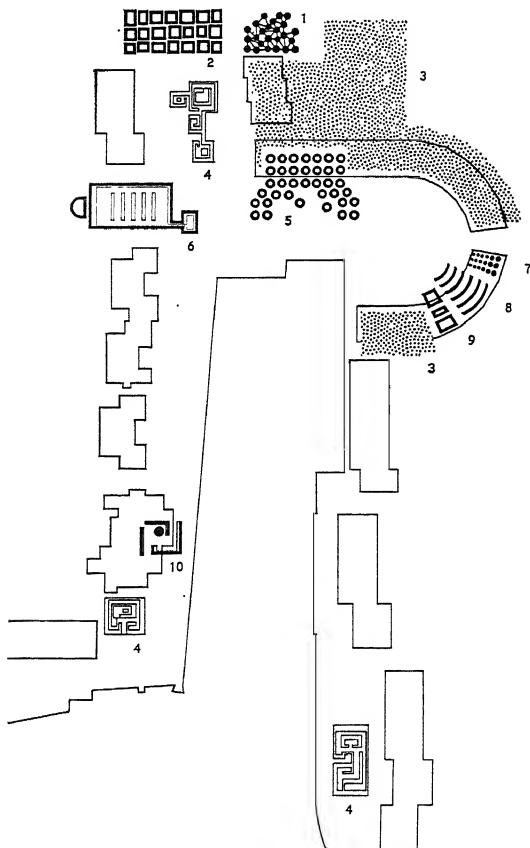
Credit: Gil Amiaga



Credit: Whittlesey, Conklin and Rossant

(Above) Reston

A 15-storey apartment structure offers a focal point and emphasizes the centrality of the concept of the neighbourhood plan. The town houses, with their own outdoor "living rooms", open on to a larger public living space, free from normal vehicular dangers and congestion



(Left) Reston

The neighbourhood centre displays a diversity of interests for all ages around a restful plaza and courtyards facing the inlet of Lake Anne. The variety of commercial, religious, cultural and merely casual facilities, interwoven with the town houses and high-rise apartments, provide a high level of self-containment in the neighbourhood. They virtually assure a wide variety of voluntary organization and a strong community identity

KEY: 1: nursery; 2: office; 3: commercial; 4: play spot; 5: restaurant; 6: church; 7: rathskeller; 8: auditorium; 9: library; 10: art gallery

Credit: Whittlesey, Conklin and Rossant

in isolated regions—the kind of urban atmosphere to attract and hold skilled professionals and managers of industrial and other enterprises. Despite all of the problems and disorder in the metropolis, its vigorous tempo and rich variety exert an attraction which may not be sufficiently offset in the new towns by the existence of more space, better housing standards, less congestion, or even a negligible journey to work. The fact is that with the growing decentralization of jobs and homes, a shift to the suburbs may often give families in the metropolis enough of the vaunted benefits of new towns to satisfy, if not maximize, their desires. This explains in part why planners of new towns, in Britain and elsewhere, favour higher densities, central ownership and control of urban centres, and architectural designs with more cosmopolitan appeal. There is a limit, however, to the effects which could or should be achieved by enhancing the physical environment, compared to other possibilities, such as raising the quality of schools, museums, public facilities and social services. And unfortunately all of these efforts can boomerang if local initiative is slighted and if social values are hostile to company or public paternalism.¹⁰

As a consequence of these requirements, a successful programme must satisfy several additional conditions. To begin with, the development agency, whether public or private, must take the lead in formulating the general development strategy and the more specific plans, programmes and stages of development. Of necessity, the developer must command not only ample resources, but also land acquisition and broad development powers. The developer must also have control of the critical elements of the land-use plan, particularly the location of transportation routes and infrastructure, the major uses of land and space, and probably broad powers to permit or refuse requests for remodelling or redevelopment in the new town. Those development responsibilities which must be shouldered by other agencies—public and private as well as local, provincial and national—need to be enticed, phased and co-ordinated, preferably through some system of incentives and collaborative mechanisms, into a comprehensive development strategy and programme. This dovetailing is extremely difficult to insure; but once worked out, it can reinforce the economic and social attractions of the new town to the *entrepreneur*.

To organize such a programme, careful studies must be made of the resource endowment and development potential of the economic and social activities in the region. This, of course, must be done at the very start of the programme. Without such guidance, policies for carrying out economic and social programmes tend to proceed on a catch-as-catch-can basis. Unfortunately, this happens often since most new town agencies operate on a financial shoestring and short shrift is usually given to research—even applied research—when operating pressures become severe. Thus, many towns in India are facing "a grave problem of unemployment because they have not been able to attract a sufficient number of

industries, or they have tended to become single industry towns with all of the attendant disadvantages.¹¹

Few programmes have been able to muster resources for such a comprehensive analysis. One exception is the planning of Santo Tome in the Guyana region of Venezuela. The Guyana Development Corporation has launched a variety of studies to provide the basis for an economic, social and physical development strategy. The broad aim is to devise a comprehensive investment programme, by stages, for the region and the city "consistent with and integrated into the national development plan for the nation as a whole".¹² More specifically, the general investigations of resource endowment and development potentials have been converted into a comprehensive investment plan covering infrastructure, agriculture, industry, housing, education and other social and cultural facilities. These plans in turn have been translated into realistic targets which purport to take account of market potentials and resource constraints; and these targets are being converted into specific proposals covering production plans, choice of technology, financial requirements and implementation measures including arrangements for joint ventures with foreign concerns, technical and financial assistance, training requirements and the like. Among other things, the investigations are providing the economic background data to support requests for international credits; the criteria for establishing the basis for Venezuelan participation in the Latin-American common market (taking into consideration the production potentials and role of the Guayana region); the guidelines for agricultural, industrial, commercial and housing promotion programmes aimed at serving specific types of activities suitable for the Guayana region and Santo Tome; organization of vocational training, housing, and local government programmes to meet the needs of the different types of firms and local institutions which are expected to burgeon in the new city.

With the exception of certain large firms, it would seem that only public agencies are likely to handle these requirements satisfactorily; and even large firms, however, imaginative, and to a lesser extent, public agencies are likely in most cases to find their resources strained, their motives impugned and their reservoir of good will eroded in the process.

MYTHS ABOUT NEW TOWNS

The significant aspects of new towns are sometimes offset by extravagant claims made by enthusiastic proponents. New towns, for example, are alleged to be more

¹¹ For a fuller description of some of the problems large firms can encounter see I. M. Robinson, *New Industrial Towns on Canada's Resource Frontier* (University of Chicago, 1962), pp. 151-165; and C. Ascher, "Administration of new towns in America" in United Nations, Technical Assistance Administration, op. cit. pp. 70-88. See also E. Layton, op. cit., pp. 76 and 85.

¹² See also the two reports of the Corporación Venezolana de Guayana, *Guayana, Cornerstone of the Development of Venezuela* (Caracas, July 1963); and *The Guayana Region, a portfolio of Investment Opportunities* (Caracas, July 1963). See also R. A. Blanco and A. Ganz, "Development planning for the Guayana region of Venezuela", *Development Research Digest*, vol. II, No. 2, October 1963 (National Planning Association), p. 27.

¹⁰ United Nations, Technical Assistance Administration, op. cit., p. 21.

economic than alternative development possibilities; or they are assumed to provide significant advantages for attracting labour and industry and for facilitating more rational patterns of industrial location and regional planning. Since the evidence is skimpy and the analysis one-sided, the problems tend "to be resolved by affirmation or by citing congenial facts".¹³ The appropriate use of new towns is likely to be better understood once it is clear why some of these claims lack substance.

Strictly speaking, one can consider new towns as one of several possible ways of providing for additional physical developments which are necessary or unavoidable. The question is whether it is the least expensive technical solution. Unfortunately, a firm answer is not possible. Comparison is hazardous since other types of development vary considerably. There are many possibilities besides the alternative of high-rise buildings in central areas. There may be several ranges of intensity of development in the large city from the core to the periphery. There can also be linear alignments of residential, industrial and service areas; the concentration of residential centres in the core and the employment areas in the suburbs; the creation of clusters of industrial and shopping areas in the periphery, surrounded by residential areas; and still other unexplored possibilities.

Difficulties of comparison abound, even when similar standards are assumed. Account must be taken of capital and operating costs, private and public costs, short- and long-run costs, waiting costs, hidden costs of wasted facilities, and the like. These costs are not easy to establish: the data are generally inadequate; they also may change markedly with variations in the scale and speed of development, the relative efficiency of the building industry in handling different types of construction, the existence of surplus capacity in the existing municipal plant and services, and the marginal costs of adding to plant and services.

Some persons think that new towns are cheaper because lower land costs, plus profits from rising rents and land values of municipally owned land, would rebound to the benefit of the public. Others emphasize the savings from low density and planned industrial and residential development, or the closely aligned employment, residential, shopping and country areas all within walking or short commuting distance. Even if correct, few of these claims are decisive. Cities like Liverpool and Stockholm, which own much of their surrounding open land, reap similar benefits without necessarily building new towns. On the other hand, a capital value tax system like that of the United States, is in a sense a form of municipal land ownership, with increasing revenues for the community resulting from a formula geared to rising assessed values and tax rates. Presumed savings from low density, lower land costs, or planned industrial and residential areas may occur in many types of suburban developments; and some of these savings may be offset by higher costs for roads and higher transportation costs for private and

public services. Finally, closeness to one's place of employment may not necessarily yield advantages or lower costs, if closeness is defined not as a relationship between the principal wage earner and his present job but as the accessibility of many or all wage earners to maximum opportunities for employment, shopping and cultural activities.

The most frequent argument of all is that as the scale of city grows beyond a certain size, costs rise. Doubtless efficiency decreases as a city grows beyond a certain size, just as it is equally true that costs increase if cities do not grow beyond a certain size. But it is not at all certain when these points have been reached; nor how they vary for different types of cities, regions, economic systems or technology. The claims are shrill, the answers not at all certain, and the difficulties surrounding analysis explain why no authoritative data are yet available to end the controversy. True, quite a varied assortment of criteria and data have been developing on aspects of how much different-sized cities cost. But the variability in services has vitiated most comparisons. Suitable measurements of the quality, scope, efficiency and need for public and private facilities are either unavailable or discouragingly inadequate. Conclusions from the surveys that have been made are generally partial, indeterminate, inconsistent, or dubious because of the limitations of the assumptions, methods or data.

Large cities can vie with new towns in providing organized industrial areas, attractive shopping centres and handsome residential subdivisions. They can provide the benefits of any of the development policies employed by new towns. In short, these characteristics are not the essential features of the new towns. What is unique, however, is the relatively small scale of new towns, the linkage between major land uses and especially the reduction of the journey to work. Possibly the most plausible argument for new towns for labour and industry has been that the expansion of urban centres causes congestion, lengthens the journey to work and results in the loss of time, energy and money for the commuter, not to mention costs for the community for expensive transportation facilities and services of all kinds.

However, part of the responsibility for burdensome and unnecessary trips lies in the failure to control development at the outskirts of a city, poor location of factory and residential sites, unsatisfactory transportation facilities and other results of poor or no planning. To some extent the difficulties can be reduced by palliatives like staggered working hours and better train schedules. But dependence on the journey to work would still appear to be indispensable for the efficient functioning of a modern economy. For employers it means a welcome mobility of labour as well as a flexible labour market. Keeping the size of the cities modest, if not small, tacitly assumes a relatively small and stabilized labour force. But these limitations are often incompatible with the present needs of many economic activities. Larger cities are necessary for industries requiring a large, skilled labour force, ancillary activities, markets and highly specialized facilities. For workers the journey

¹³ L. Rodwin, *op. cit.*, p. 32. Most of the information of this section is based on L. Rodwin, *op. cit.*, ch. 3.

to work opens the prospect of varied, more and better jobs. It likewise facilitates adjustment to changing circumstances such as factory relocation, residential shifts to preferred neighbourhoods, flexibility for home ownership and necessary opportunities for secondary wage earners.

The fact is that the journey to work must be accepted as the necessary price paid for greater industrial stability, superior employment possibilities and a higher standard of living.¹⁴ For similar reasons, Political and Economic Planning has emphasized in its report on the location of industry that it is "... impossible to reconcile the need for a maximum variety of industry and occupation with the need for a minimum journey to work".¹⁵ Only a large city or groups of communities can furnish the flexibility required to maximize employment and stabilize the economic base or segments thereof.

The early literature on new towns leaves the impression that they could be located anywhere. There were few reasons for thinking otherwise if the workers walked to work and if the new towns were basically self-contained. Since industries tended to move away from areas of high rents and taxation, many persons assume that they could be established wherever cheap land and rates were obtainable. Actually, these considerations alone are relatively unimportant for most industries. Many firms, including public utilities, central retail establishments, financial institutions, amusement, cultural and government activities and certain types of wholesaling and light industries have strong ties to central areas. Moreover, the bulk of the shifts which occur, even if outside the corporate limits, are usually not far from the city. Maximum distances from the centre vary for different industries and with the development of transportation and improved technology. Probably far more intelligent location and steering of industries is possible and even desirable. But there are some significant advantages in the present locations and there are certain limits beyond which most economic activities will not go. On the basis of fairly general location trends, distinctions have been drawn between movement to the periphery as opposed to diffusion within the surrounding counties and to dispersal into other regions. Noting these locational impulses is important since they suggest some of the reasons for metropolitan concentration and they caution us against plausible illusions on the subject of dispersal and the location of cities.

Some new, independent cities will undoubtedly develop because of resource development programmes and inter-regional migration of industry and population. But, as

has already been noted, the building of new towns is rapidly becoming one of the approved methods of organizing existing metropolitan growth. The principle of encouraging new communities surrounding the parent city has been accepted. The major difference from Howard's ideas, however, is that the metropolis is serving as a substitute for the small parent city he envisioned. Howard contemplated siphoning out the population of London; but his plan of development, originally and fundamentally intended for the building of small new towns has, ironically enough, become one of the techniques for guiding the growth of London, Birmingham, Merseyside and Glasgow, not to mention Stockholm, Mexico City, Kuala Lumpur and other congested metropolitan areas.

What is all the more disappointing to the fundamentalist proponents of new towns is the recognition that the building of new towns will not necessarily prevent the continued expansion of the big metropolis. As long as the metropolis is experiencing the growth of population and economic activity, new firms and families may replace these leaving for new towns. It is far too expensive to acquire and demolish industrial plants, existing housing and other facilities, especially in a period of shortage. This problem is intensified by expansion of office employment which, as the experience of London has shown, has offset the reduction in population and density that might otherwise have occurred.¹⁶

New towns which are not metropolitan satellites may serve as vehicles for accommodating sudden growth in small towns or isolated regions; or for providing focus and urbanity for haphazard and scattered development; or for some of the other special purposes we have enumerated. But these developments must be wisely selected, for economic locations and appropriate combinations of resources are limited; and the number of new towns, especially in developing countries with their vexatious exchange problems, their meager resources, and their compelling requirements for quick returns on investments, are never likely to be large if they are to be truly successful. What is more, strong objections and pressures are sure to be levelled against the spawning of many new communities while there is a geographic shortage of economic opportunities within existing towns. As Political and Economic Planning contended, when "there are not enough mobile industries to go round, it will be impossible to satisfy the employment needs of existing individual communities, but it may be possible to provide a better balance if several communities are considered together".¹⁷

Past experience suggests that the policy on new towns has not been sufficiently comprehensive. Proponents have placed their emphasis primarily on the new communities. The balance sought is largely between place of work and

¹⁴ K. Liepman, *The Journey to Work* (New York, Oxford University Press, 1944), ch. 5. For evidence that the British new towns have encountered some difficulty in providing enough variety of jobs for different groups in the population, see J. H. Dunning, "Manufacturing industry in the new towns", *The Manchester School of Economics and Social Studies* (Manchester), vol. 28, No. 2, 1960, p. 138; and pp. 141-150.

¹⁵ "Planning: location of employment", *Political and Economic Planning* (London), No. 224, August 25, 1944, p. 7. Political and Economic Planning is an independent, non-party research group in England, which prepares a fortnightly broadsheet on planning as well as occasional full-scale reports on a variety of economic and social problems.

¹⁶ For further details on the expansion of the London region, see L. Rodwin, op. cit., pp. 65-68; P. Self, *Cities in Flood* (London, Faber, 1957). W. Thomas, "The growth of the London region", *Town and Country Planning* (London), vol. 29, No. 5, pp. 185-193; and A. G. Powell, "The recent development of Greater London", *The Advancement of Science* (London), vol. 27, No. 65.

¹⁷ *Political and Economic Planning*, op. cit.

residence, between town and country. More emphasis needs to be placed on the appropriate functions and sizes of cities; on the relationships of existing and new cities; and on an evaluation of development prospects and requirements from a regional and national point of view. Howard himself once remarked near the end of his career that when he conceived his ideas practically no one had any "conception whatever of regional planning. A colossal mistake might be made if in starting new towns the importance of their interrelationships has not been sufficiently recognized."¹⁸ Exploring this wider, more balanced view would appear to be one of the major tasks of the present generation of planners.

THE ROLE AND FUNCTION OF A NEW TOWNS POLICY

Experience with new towns in Great Britain and other countries shows that they are neither a panacea nor a failure. They are complex and increasingly valuable tools which planners can employ to stimulate development and organize the physical environment. In large measure, this explains why the contributions of the British new towns do not lie in the particular type, size, economic activity or other characteristics of the towns developed in Britain, important as these aspects might be for some purposes. Actually, new towns developed elsewhere might be (and, in fact, have been) quite different in size, design, social features or specific economic functions. The historic significance of the British new towns is that the British Government found it appropriate, indeed necessary, to consider the urban pattern of the country a matter of vital national interest requiring its attention. It is the

¹⁸ E. Howard, "Planning problems of town, city and region", *Papers and Discussions at the International City and Regional Planning Conference*, New York City (Baltimore, Norman Remington Co., 1925), p. 8.

emergence of this sustained national interest and the subsequent evolution of a national policy that is the novel element in the British programme and what distinguishes it from new towns developed elsewhere.

In other countries, however, it may not be appropriate or feasible to duplicate this feature of the British new towns policy. This fact makes it all the more important to recognize that a new towns policy (including the satellite and town development variations) may serve a number of different ends. It offers one important way of organizing economic, social and physical development. It suggests a method of channelling the peripheral growth of metropolitan areas. It offers an instrument for coping with special urban problems such as the redistribution of population and economic activity, the encouragement of new resource development regions, the handling of boom towns, and the reconstruction of blighted or disorderly development.

Perhaps the chief advantage for developing areas is that a broad new towns policy would create a mechanism, which would deflect some of the growth away from one or a few large cities and encourage expansion of existing small cities. Moreover, as the programme continues, sooner or later it will prompt those responsible for its direction to anticipate and correct disorders, if possible, before they become too serious. Finally, the policy may be expected to orient thinking toward significant issues such as the character, scale and location of new urban developments, the importance of adequate administrative machinery for resolving conflicting government policies, the most effective means of co-ordinating development programmes between and within regions and the necessary applied research to improve existing performance.

(Table 4 follows)

Table 4. Representative list of new towns built or proposed (since 1946) in mixed economies outside Great Britain

Name	Development body	Type	Population		Area	Industry type	Industrial area
			Proposed	Actual			
AFRICA							
Algeria							
Plateau des Anassers ^a p. 290-291 .		New town — satellite of Algiers	55,000	—	—	—	—
Ghana							
Akosombe ^a .		—	30,000	9,000 (1963)	—	Hydro-electric plant, power for Tema industry	—
Tema ^{a w} . . .	National Government	New town — satellite 18 miles east of Accra	85,000 (1970) 250,000 (1985)	48,000 (1963)	—	Port and industrial city for Accra, aluminium, refinery, steel	250 acres port facilities; 74 acres in industry or developing (1961)
Guinea							
Sabende ^{b c} p. 134 . . .	Private company	New town — isolated	20,000-40,000	10,000 (1960)	—	Bauxite mine, aluminium plant	—
ASIA							
India							
Bhilai, ^d Madhya-Pradesh . . .	Private company of government	New town — isolated, 156 miles from Nagpur	100,000 approx.	30,000 approx. (1960)	—	Heavy (steel) and medium	—
Chandigarh, Punjab, ^b p. 140 . . .	Punjab government	New town — isolated, 160 miles north of Delhi	150,000 (1st phase), 500,000 (eventual)	75,000 approx. (1963)	—	Punjab capital city	—
Chittaranjan, West Bengal p. 191 . . .	National Government Min. of Rwy.)	New town — satellite 20 miles from Asonsol	42,000	30,000 (1951) 40,000 approx. (1962)	—	Heavy locomotive works	403 acres occupied (1962)
Durgapur, ^e p. 19, West Bengal . . .	National Government	New town — isolated, 117 miles northeast of Calcutta	125,000	65,000 (1962)	10,500 acres	Steel	—
Faridabad, ^e pp. 25-29, Punjab . . .	Punjab Government	New town — satellite 17 miles south of Delhi	40,000-50,000	35,000 (1961)	4,480 acres	Heavy, medium, light	—
Jagannath-nagar, ^a Bihar ^d . . .	Private company of National Government	Expanded town — satellite 4 miles south of Ranchi	90,000 approx.	—	2,295 acres	Heavy (machines)	—

Table 4 (continued)

Name	Development body	Type	Population		Area	Industry type	Industrial area
			Proposed	Actual			
Nangal, Punjab ^f	Private company of National Government	New town — 50 miles north of Chandigarh	50,000 (100,000 possible)	20,000 approx.	2,940 acres	Fertilizers and chemicals	794 acres (factories) 143 acres (service industries)
Rourekela, ^d Orissa	Private company of National Government	New town — isolated, 260 miles west of Calcutta	100,000	33,000 approx. (1960)	3,750 acres (residential and commercial)	Steel and related industries	—
<i>Israel</i>							
Arad ^g	National Government	Proposed new town isolated	50,000	—		Petrochemical and potash	—
Ashdod ^g	National Government and private	New town — 22 miles south of Tel Aviv	200,000 (1976)	22,000 (1963)	9,885 acres approx.	Heavy, power, mixed	—
Beersheba ^g	National Government	Expanded town — isolated, 45 miles southwest of Jerusalem	150,000 (1970)	60,000 (1963)		Mixed, chemicals, fertilizer	—
Eilat (Elath) ^g	National Government	New town — isolated, 175 miles south of Tel Aviv on Gulf of Aqaba	75,000 (1972)	15,000 (1962)		Mixed, tourism, light industry	—
<i>Japan</i>							
Hino ^h	National Government	New town — first satellite town of Tokyo 22 miles west	30,000	20,000 (1960)	3,320 acres	Medium	850 acres
Yokkaichi City ⁱ	National Government	Proposed expanded town 19 miles south of Nogoya	300,000 (1975)	—	—	Proposed oil refinery, petro-chem., iron and steel	—
<i>Malaysia</i>							
Petaling Jaya ^j	National Government	New town — satellite 6 miles from Kuala Lumpur	70,000 (1967)	33,000 (1961)	3,000 acres	Mixed	300 acres
<i>Hong Kong</i>							
Tsuen Wan ^k	Crown Colony Government and private enterprise	Replanned squatter town satellite 8 miles west of Kowloon	630,000	84,000 (1961)	1,000 acres (provisional)	Textiles, ship- breaking, films and varied	216 acres (provisional)
<i>Pakistan</i>							
Islamabad, West Pakistan ^l	National Government	New national capital — northern W. Pakistan twin city of Rawalpindi	400,000 (1980)	—	—	Government and future light industry	—

Table 4 (continued)

Name	Development body	Type	Population		Area	Industry type	Industrial area
			Proposed	Actual			
EUROPE							
France							
Canteleu New Town, Seine-Maritime ^m	—	Proposed new town between Rouen and Le Havre	40,000	Canteleu Village	750 acres	—	—
Mourenx, ^a p. 290, Basses-Pyrénées	National Government	New town — near Lacq in south-west France	12,000	9,000 (1962)	—	Natural gas extraction and purification with associated industries	—
Surville, Yonne, ^a p. 289 . . .	—	Proposed satellite near Montereau 45 miles south-east of Paris	47,000	12,000 (original)	—	Industry for both Montereau and Surville	—
Toulouse le Mirail, Haute-Garonne ^m	City of Toulouse	Proposed new town — satellite 3 miles from Toulouse	100,000	—	1,800 acres	Light industry proposed	—
Federal Republic of Germany							
Cologne New Town, ^b p. 133	City of Cologne	Proposed new town — satellite of Cologne	100,000	—	16,500 acres	—	—
Greece							
Aspra Spitia ^a	Private enterprise in co-operation with National Government	New town — isolated, 65 miles west of Athens on Gulf of Corinth	6,000-7,000	—	160 acres (res.)	Aluminium plant	—
Netherlands							
Beverwijk, North Holland ^{aa}	National Government	Expanding town north of Velsen, 12 miles northeast of Amsterdam	150,000 (1980)	24,000 (1956)	—	Future major industry in Beverwijk. Industries at Velsen—steel, chemicals, paper mill	—
Emmeloord, ^{aa} ^{da} Northeast Polder . .	National Government	New town — centre of North-east Polder 45 miles northeast of Amsterdam	10,000-12,000	5,000 (1955)	—	Major commercial centre for North-east Polder	—
Emmen, Drenthe ^{aa}	National Government	Expanding town with major new town characteristics 90 miles northeast of Amsterdam	50,000-60,000	16,000 (1956)	100 sq. mi.	Alternative employment to declining peat digging industry. (nylon, spinning, etc.)	—

Table 4 (continued)

Name	Development body	Type	Population		Area	Industry type	Industrial area
			Proposed	Actual			
Sweden							
Farsta, ^b p. 130	—	New town — satellite south of Stockholm	35,000	—	—	—	—
Vällingby ^o . .	—	Residential — industrial suburb 9 miles west of Stockholm	23,000	—	2,560 acres approx.	Light — varied	—
NORTH AMERICA							
Canada							
Ajax, Ontario, ^p p. 167, ^q pp. 131-134	National Government and private development company	New town — satellite 25 miles northeast of Toronto	25,000	6,000 approx. (1959)	3,000 acres	Mostly light	600 acres approx.
Bramalea, Ontario ^r .	Private development company	New town — satellite 23 miles northwest of Toronto	100,000	4,500 (1963)	8,000 acres	Mixed	1,200 acres
Don Mills, Ontario, ^q pp. 135-140 ^{bb}	Private development company	Residential and industrial suburb of Toronto	28,500	25,000 (1962)	2,127 acres	Light — varied	391 acres
Kitimat, British Columbia ^r .	Private development (aluminium) company	New town isolated, 400 miles north of Vancouver on coast	30,000-50,000	12,250 (1959)	66 sq. miles — 2,750 buildable	Heavy with proposed medium	800 acres approx.
Mexico							
Cludad Industrial Bernardino de Sahugun, ^p p. 181 . . .	Non-profit Government company	New town — 62 miles from Mexico, D.F.	60,000	7,000 (1958)	—	Medium (Diesel engines and auto assembly)	—
United States							
Elk Grove Village, Illinois, ^q pp. 141-147	Private development company	Residential industrial suburb 25 miles northwest of Chicago	40,000	14,000 (1962)	4,500 acres	Light — varied	1,800 acres
Irvine Ranch, California ^t .	Private development company	New town — satellite of Los Angeles, 45 miles south	100,000		40,000 acres (of a total 93,000)	University with 27,500 students	1,000-acre university plus scattered industry

Table 4 (continued)

Country	Development body	Type	Population		Area	Industry type	Industrial area
			Proposed	Actual			
Reston, Virginia, ^b p. 148 ^a	Private development company	New town — satellite 18 miles west of Washington, D.C.	75,000 (1980)		6,800 acres	Proposed research, electronics, light industry and Federal Government offices	900 acres (industrial and government)
AFRICA							
Australia							
Elizabeth, ^z South Australia	State government	New town — satellite 12 miles north of Adelaide	50,000	—	6,600 acres	Weapons research, missile testing, vehicle assembly, medium and light industry	—
SOUTH AMERICA							
Brazil							
Brasilia, D.F. ^u	National Government	New national capital — isolated, 570 miles northwest of Rio de Janeiro	450,000 (1965)	200,000 (1962)	—	Government and future industry	—
Venezuela							
Santo Tomé de Guyana, ^v Bolivar	National Government	Expanded town — isolated 400 miles southeast of Caracas	650,000 (1980s)	55,000 (1963)	37,500 acres	Heavy, mixed (steel, iron ore, petro-chemical, electro-chemical, heavy machinery and equipment pulp and paper, construction)	—

^a "Planning commentary" *Town and Country Planning* (London),
ol. XXXI, No. 7 (July, 1963), 292-293.

^b Paul Ritter, *Planning for Man and Motor* (Oxford, Pergamon
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^c "Sabendé, Ville Nouvelle en Guinée," *Architecture d'Aujourd'hui*,
Boulogne, No. 88 (February-March, 1960), pp. 96-101.

^d *Kothari's Economic Guide and Investor's Handbook of India 1961*,
ol. II (Madras, Kothari and Sons, 1961).

^e United Nations, Technical Assistance Programme, *Public Adminis-
tration Problems of New and Rapidly Growing Towns in Asia* (Sales
No. : 62.II.H.1).

^f "Nangal, A new Indian industrial township," *Urban and Rural
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p. 12-27; reprinted in *Ekistics*, vol. VI, No. 38 (December, 1958),
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^g Information supplied by Yehuda Tamir on basis of approved
master plans; Yehuda Tamir is Assistant Director General for Planning
and Programming, Ministry of Housing, Israel.

^h "Hino: Première Ville Satellite de Tokio," *Architecture d'Aujourd'hui*
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ⁱ "Study of land use planning of Yokkaichi City," *Ekistics*, vol. XII,
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^j "Malaya's New Industrial Centre," *Far Eastern Economic Review*
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^l "The spirit of Islamabad," *Ekistics*, vol. XII, No. 73 (November,
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ⁿ "New aluminium settlements: Aspra Spitia, Greece," *Ekistics*,
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^o "Vällingby, the new section of Stockholm," *Architectural Record*
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^p William Brode, *Industrial Estates: Tool for Industrialization*
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^q Urban Land Institute, *Industrial Districts: Principles in Practice*
Technical Bulletin No. 44 (Washington, The Institute, 1962).

^r *Bramalea: Canada's First Satellite City* (a promotion brochure of
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^s "Industry builds Kitimat — first complete new town in North
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October, 1954), pp. 128-147, pp. 120-127, pp. 158-161.

^t "The land: the man with the plan," *Time* (New York), vol. LXXXII
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^u "Crisis in Brasilia," *Ekistics*, XIV:83 (October, 1962), 143-146
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^v R. A. Blanco and A. Gany, "Development planning for the Guayana
region of Venezuela," *Development Research Digest*, National Planning
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^w "Tema: Ghana's new town and harbour," *Town and Country
Planning*, London, vol. XXX, No. 3 (March, 1962), pp. 113-116.

^x "New towns for France," *ibid.*, vol. XXX, No. 7 (July, 1962).

^y "Canada's first satellite city," *ibid.*, vol. XXIX, No. 3 (March,
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^z "Elizabeth — an Australian new town," *ibid.*, vol. XXVIII,
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^{aa} "New towns in the Netherlands," *Progress* (autumn 1956) (the
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^{bb} "Don Mills: nearly a new town," *Town and Country Planning*,
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^{cc} *Reston, Virginia* (Fairfax, Virginia, Simon Enterprises, circa 1962)
(a development brochure).

^{dd} "North Eastern Polder 1955," *Forum* (Amsterdam); special issue
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NEW TOWNS IN BRITAIN

WILLIAM A. ROBSON

National policy on new towns in Britain dates from the end of the second World War, when the Government appointed the Reith Committee to inquire into the subject. The reports of the Committee were quickly followed by the New Towns Act in 1946 which authorized the extensive programme of planning and building new towns of the past twenty years.

Prior to this act there had been a long period of discussion and practical experiment concerning new towns by unofficial citizens and groups. The originator was Ebenezer Howard, who published his famous book, *Tomorrow: A Peaceful Path to Real Reform*, in 1898 and founded the Garden City Association in 1899. The book was revised as *Garden Cities of Tomorrow* in 1902 and re-issued on several occasions to the present day.

Even more important than the public discussions was the demonstration of the practicability of the garden city idea by the construction of two new towns. The First Garden City, as Letchworth was called, was founded in 1903-1904, about thirty-five miles north of London. This was a privately financed and administered pioneering venture initiated by Howard and a band of public spirited disciples. A company was formed, acquired an estate of 3,800 acres, and developed it on the lines suggested by Howard. Welwyn Garden City, begun 1919-20, was initiated on the same lines, Ebenezer Howard again playing a leading part.

The new-town idea was originally conceived as an attempt to remedy overcrowding in the large industrial and commercial cities of Britain and to prevent the depopulation of the rural districts. The first of these aims has remained a major objective of national policy. All but three of the new towns designated since 1946 have aimed at relieving the congestion of a great city. The rural overtones of the term garden city have given way to the more urban emphasis of the term new town.

The essential features of the New Towns Act are that the competent Minister determines the new town programme. He decides how many new towns shall be built and where they shall be located. He acquires the necessary land, determines the eventual size, and with the approval of Parliament provides the money for capital investment. He appoints the members of the Development Corporation of each new town, which takes charge of the planning and development, and controls their actions and policies in several important respects.

Twenty-one new towns have been built or are in process of construction under the New Towns Act, in-

cluding Welwyn Garden City, which was taken over into the public sector. Of these, eight are satellites of Greater London; Dawley is a satellite of Birmingham; Skelmersdale is a satellite of Liverpool and the Merseyside conurbation; Corby is within easy distance of the great steel plant at Corby; Cwmbran is in South Wales, Peterlee and Aycliffe are in Durham. Four are in Scotland. Several additional new towns are projected by the Government.

The word satellite is not a very apt term to use in this connection because the main purpose of a new town located within a distance of, say, twenty to fifty miles of a great city is to bring about the decentralization of industry and other kinds of employment as well as housing, shops, schools and opportunities for recreation. The new town movement expresses a revolt against megalopolis and the ever-lengthening journey to work, with its increasingly high costs of money, time and nervous energy. Thus, the aim is to make each new town a self-contained unit, including the home, workplace and recreational facilities, and to free the inhabitants as far as possible from dependence on the great city. It must be conceded, however, that proximity to a great city adds greatly to the attractiveness of a new town, both from the standpoint of providing a large market close at hand for goods and services of all kinds, and from the standpoint of affording amusements, cultural opportunities, and specialised services such as medicine.

Many new towns have been based at an existing village or small urban settlement. The Town Development Act of 1952 enables large-scale development of an existing town to be carried out with financial and technical aid provided by a big municipality which is in need of over-spill housing accommodation outside its own area. Thus the London County Council (now the Greater London Council) entered into agreements with the municipal authorities of a number of towns (one as far as Andover in Hampshire, some sixty-six miles away), whereby the latter undertook large-scale developments of housing, factories and offices in their respective towns. London provides financial and other assistance in exchange for the right to send Londoners to live and work in these expanded towns.

The main difference between a new town and a town development scheme lies in the scale of operations and the source of finance for capital investment. Action under the Town Development Act applies only to an existing town of some maturity and the expansion is not of such magnitude as completely to transform the town; whereas

a new town overwhelms, transforms and replaces any village or urban settlement which previously existed on the site.

Each new town is planned as a unit from the outset. It is planned to accommodate a specified population, with sufficient land for factories, offices, etc., to provide employment for all workers who will live in the town. The populations originally planned lay mostly between 25,000 and 80,000. In some instances the Government has decided to raise the original population figure to a higher maximum. Thus, Harlow has been raised from 80,000 to about 120,000.

The Development Corporation is established solely to create a new town and is dissolved when its task is completed or nearly achieved. It prepares the plan and submits it to the Minister for approval. It undertakes major works such as the construction of highways, a sewerage system, water supply, and clearance of the site. It is responsible for building houses and flats, and may also construct factories, offices, shops, civic buildings, recreational premises and other amenities. It may do all these things either by employing its own labour or through other agencies. The land is vested in the Development Corporation, which also owns most of the houses and other buildings. On the average, some 93 per cent of the houses are let to the tenants by the Development Corporations, although a small proportion of houses may be sold to the occupants.

Great attention is paid in new towns to amenities of all kinds. These include the layout of a dignified and artistic town centre often embellished by one or more pieces of modern sculpture; ample provision of open spaces for parks, public gardens, recreation grounds, playfields and children's playgrounds; public libraries, museums, art galleries, cinemas; buildings for the practice and presentation of the arts, whether by professionals or amateurs; swimming pools and gymnasia; accommodations in which social clubs or scientific, literary, historical or artistic societies can hold their meetings; premises for youth clubs, dance halls and the like. Not all these amenities are to be found in each of the new towns; but some are in all of them and all of them in some.

Of equal importance from the standpoint of daily living is the standard of housing, the layout of the streets, the provision of gardens, and good landscaping. Some new towns have been criticised on the grounds that their design is too open; that the widely separated residential and shopping centres involve unnecessarily long journeys; that the towns tend to sprawl and are wasteful of land. Some of these criticisms may be justified in certain places. Actually, the densities are slightly greater than those usually followed in British municipal housing estates constructed in the inter-war years.¹

The factory areas of the new towns are usually well planned and the buildings represent good standards of modern industrial architecture. The great bulk of the employment is provided by private enterprise, and it is

necessary to induce firms to establish factories, offices, warehouses, laboratories, etc., in the new towns by offering them attractive buildings at moderate rents, with advantages of space for expansion and homes for their labour force amid healthy and pleasant conditions, thus avoiding long and costly journeys to work. The new towns could not have succeeded if employers had not recognized the substantial economic advantages. They have in fact been highly successful in attracting industries of many different kinds. Indeed applications are sufficiently numerous to permit selection of the most suitable types of employment.

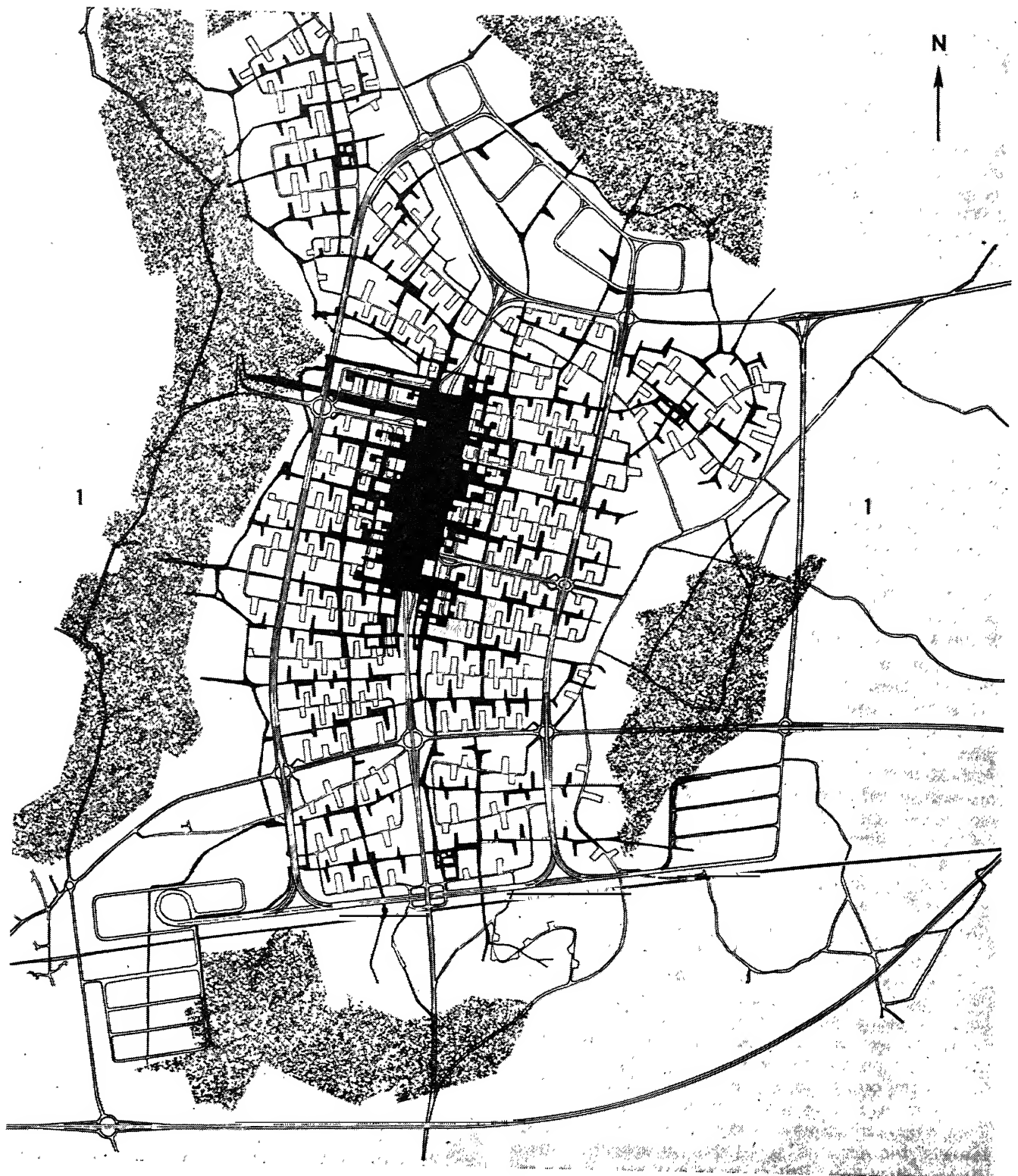
An important feature of the administrative framework is that the local government authority remains in existence throughout the planning and construction of a new town. There is thus a democratically elected municipal council responsible for promoting the social interests of the inhabitants of the new town and able to provide a wide range of social services. The Development Corporation is in charge of the quite distinct task of designing and constructing the town, phasing its different aspects in a coherent programme, persuading employers and their workpeople to come to the town, and providing basic public works. This arrangement ensures that the political and social life of the community evolves *pari passu* with the increase of population and the development of its physical environment. It provides properly constituted organs for the ventilation of opinion, and the expression of complaints and demands by the citizens.

This dual administrative framework calls for a high degree of tact, understanding and mutual acceptance on the part of both development corporation and municipal authority. The Development Corporation is a statutory body like the local government authority; but it is appointed by and responsible to the Minister of Housing and Local Government whereas the local authority is answerable to the citizens who elected it. The Development Corporation spends money provided entirely by Parliament from national funds, whereas the local authority draws a substantial part of its revenue from local taxes. The difficulties inherent in this delicate relationship have on the whole been successfully overcome.

When the Development Corporation's *raison d'être* has come to an end, it is then liable to be dissolved. A lengthy discussion took place a few years ago as to what should then happen. One school of thought contended that the whole mass of property of the Development Corporation should be transferred to the municipal council. Others argued against this course on the ground that in Britain a local authority does not own virtually the whole mass of houses, shops, factories, etc., in its area; that irresponsible action might occur if this were done in the new towns; and that if the property was so transferred, the inhabitants would be placed in a position of extraordinary and unjustified privilege.

In the end, the New Towns Act of 1959 was passed which provided for the setting up of a Commission for New Towns, appointed by the Minister of Housing and Local Government and responsible to him. This body is entrusted with the ownership, management and improve-

¹ Frederic J. Osborn and Arnold Whittick, *The New Towns* (London, Leonard Hill, 1963), p. 111.



Hook, Hampshire, United Kingdom: planning study for new town

Credit: Greater London Council

Although this town was not built, its plan reveals a new level of maturity in new-towns planning. The diagram above, for instance, shows the pedestrian connexions with the town centre; nearly all are free of street-crossings at grade. Yet the town is planned for a very high level of automobile ownership. With high residential densities, nearly all of the 100,000 inhabitants would be within easy walking distance of the town centre and industrial locations. The centre itself functions at two basic levels; vehicles operate at ground level in a natural depression and pedestrians use a deck built over the depression. Industry is concentrated in estates at the upper, lower left and lower right portions of the plan

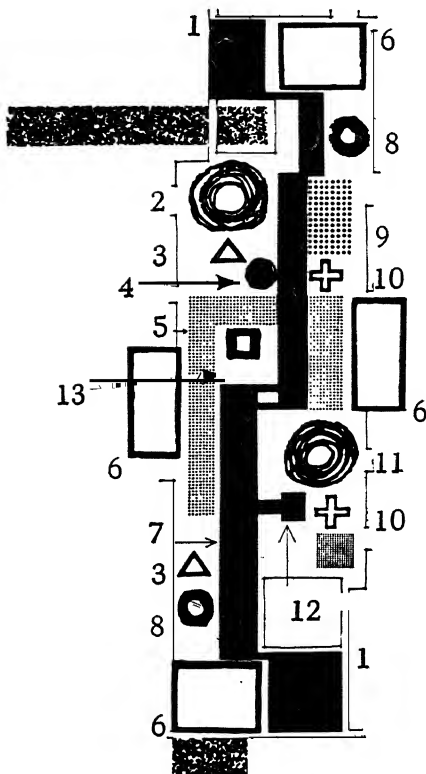
KEY: 1: open space



Credit: Greater London Council

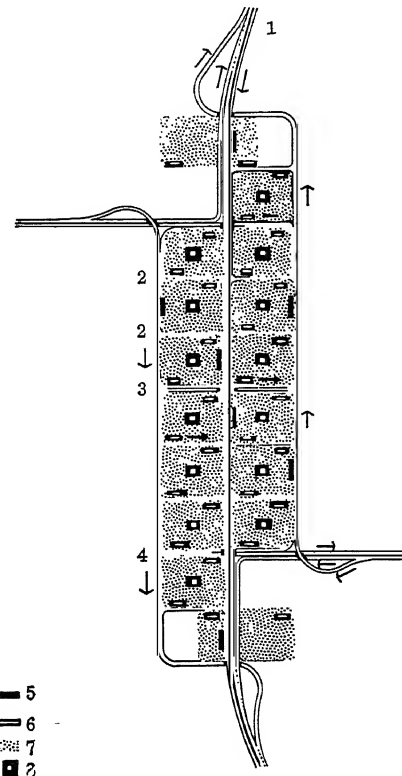
Hook town centre

Intensity, diversity and the integrity of individual functions mark the town centre. Intensity and diversity are revealed in the diagram at lower left. Integrity is shown in the drawing above, where stairways connect the vehicular and pedestrian levels. The diagram at lower right indicates the vehicular circulation beneath the centre's main structures



Credit: Greater London Council

KEY: 1: local shopping; 2: entertainment zone; 3: hotel; 4: G.P.O.; 5: further education; 6: secondary school; 7: regional shopping; 8: residential zone; 9: market; 10: church; 11: government zone; 12: department store; 13: library



Credit: Greater London Council

KEY: 1: spine road; 2: service roads, two-way; 3: service roads and connecting road; 4: distributor road, one-way traffic; 5: bus stops, ramps and escalators to pedestrian deck; 6: staircases to deck; 7: parking and service areas; 8: service hoists

New towns progress to 31 March 1965

Town	Date designated new town	Population		New houses and flats		New schools		Office space		New industries	
		At designation	At 31 March 1965 (estimated)	Completed	Under construction	Number completed	Number of children provided for	Completed sq. ft.	Under construction sq. ft.	Number of firms	Number employed by new firms
Basildon	1949	25,000	65,590	13,510	1,782	30	11,060	107,375	—	115	17,846
Bracknell	1949	5,000	25,350	5,865	188	13	4,290	269,192	—	31	7,491
Crawley	1947	10,000	60,500	13,306	190	25	20,820	320,950	35,000	83	16,127
Harlow	1947	4,500	68,340	16,855	993	27	15,320	203,533	1,435	91	15,384
Hatfield	1948	8,500	23,400	3,878	241	14	5,140	39,582	54,000	15	1,013
Hemel Hempstead	1947	21,000	66,100	12,560	292	28	13,320	364,436	10,500	61	9,973
Stevenage	1946	7,000	53,550	12,982	1,265	27	14,650	223,286	26,460	59	15,412
Welwyn Garden City	1948	18,500	41,810	5,646	481	20	6,900	121,804	45,000	51	5,051
Corby	1950	15,700	44,500	5,752	302	17	9,800	49,574	—	24	3,160
Cwmbran	1949	12,000	35,170	5,603	920	13	5,130	36,750	—	12	232
Dawley	1963	22,500	22,500	—	—	—	—	—	—	—	—
Newton Aycliffe	1947	60	15,820	4,643	162	9	3,270	10,326	—	—	—
Peterlee	1948	200	17,480	4,873	355	16	7,266	16,780	16,524	16	1,621
Redditch	1964	29,000	29,000	—	—	—	—	—	—	—	—
Runcorn	1964	28,500	28,500	—	—	—	—	—	—	—	—
Skelmersdale	1961	8,500	8,600	44	371	—	—	26,715	—	10	552
Washington	1964	20,000	20,000	—	—	—	—	—	—	—	—
Cumbernauld	1955	3,500	15,800	3,495	1,847	4	2,155	—	1,500	23	3,543
East Kilbride	1947	2,500	44,400	11,466	1,316	13	9,760	62,175	57,500	85	9,061
Glenrothes	1948	1,150	17,100	4,521	680	7	3,876	46,995	—	11	1,720
Livingston	1962	2,063	2,200	35	212	—	—	—	36,000	3	42

ment of the property formerly belonging to the Development Corporation of Crawley and Hemel Hempstead, now abolished. Similar transfers will in due course take place in the other new towns. Although the Commission is engaged mainly in property management, it may continue to develop the town, but at a rate far less than when the Development Corporation was in full swing. The Act requires the Commission to respect the purpose for which the town was developed and the convenience and welfare of persons residing, working or carrying on business there.

The Commission is a national body but it appoints local committees in each new town coming under its jurisdiction. The Commission have declared their aim is "to be public-spirited and progressive, assisting the new towns built by their predecessors to settle into the national scene. As towns no longer new, but still growing and self-

confident, these most challenging developments of the century will perhaps realize the high hopes of all those who combine to found them".²

Finally, one may point out that the money invested by the State in the new towns has already produced a surplus in the case of two or three new towns, and similar satisfactory financial results will also occur in the other new towns in the course of time.

The new town programme during the past 20 years has been an unquestionable success from both the social and the economic point of view. Those who criticize it have not been able to point to an equally satisfactory solution of urban problems, particularly those arising in great cities.

² Great Britain, Ministry of Housing and Local Government, *Second Annual Report* (London, H.M.S.O., 1964), p. 27.

ARGENTINA'S NINETEENTH-CENTURY NEW TOWN

JORGE E. HARDOY

La Plata is the only example of a new town in Argentina. Moreover, the circumstances in which it was founded belong to a very special period in the nation's history.

Much of Argentina's nineteenth-century history was characterized by internal struggles over its form of government. Two basic forms were at issue: centralism, favoured by the inhabitants of the city of Buenos Aires, and federalism, favoured by the provinces. The struggle assumed proportions which had serious implications for the future of the nation, especially between 1855 and 1880. During those years the city of Buenos Aires served as both the centre of the national Government and the seat of Government of the Province of Buenos Aires, the capital of the Argentine Republic; federalism had triumphed and the Constitution of 1853 thus became applicable to the nation as a whole. Two months later the legislature of the Province of Buenos Aires agreed to cede the city to the nation. There remained the problem of choosing a city to be the capital of the province or of building a new one for that purpose.¹

In 1881 the Governor of the Province of Buenos Aires was Dr. Dardo Rocha. The speed with which the provincial government acted was due largely to his incentive, and his position was very influential in the decision to build a new city and in the selection of its site.² By 1883 the site on which the new provincial capital was to rise had been decided upon and on 19 November 1883 the foundation stone was laid. The building of the city began in that same year and by the time one year had passed the first buildings had been completed.

LOCATION OF THE CITY OF LA PLATA

A seven-member Commission, set up to "make a comparative study of the various localities which appeared to offer the most suitable site for the Province,"³ was guided by six main points:

¹ The circumstances leading to the founding of La Plata are aptly summed up in the report on the *Plan regulador conjunto de los partidos de Ensenada y La Plata*, Buenos Aires, U.R.B.I.S., 1961, ch. III, "Historia y evolución de los partidos de La Plata y Berisso".

² Dr. Dardo Rocha's ideas on the subject are set forth in a brief memorandum signed in March 1881 and included in the publication of the Ministry of Education of the Province of Buenos Aires entitled *Fundación de la ciudad de La Plata (documentos para su estudio)* (La Plata, 1956), pp. 29-31.

³ Ministry of Education of the Province of Buenos Aires, "Informe presentado al Ministerio de Gobierno por la Comisión nombrada para hacer el estudio comparativo de las diversas localidades indicadas como adecuadas para la capital de la provincia", 1 October 1882; *ibid.*, pp. 43-52.

(1) Advantages and disadvantages from the standpoint of the administration of the Province. Various alternatives were considered, i.e., the selection of an existing city, either in the vicinity of the city of Buenos Aires or in the interior of the Province, or the construction of a new city;

(2) Suitability of the land for building and agriculture;

(3) Water supply;

(4) External communication;

(5) Suitability from the standpoint of communication with the interior of the country and, in particular, the construction of railways;

(6) Facilities for the establishment of services for the health and well being of the inhabitants.

In October 1881 the Commission submitted its report, on the basis of which the Provincial Executive introduced in the Legislative Assembly "a bill declaring the municipality of Ensenada the capital of the Province and providing for the establishment of a city on the Ensenada heights."⁴ The site selected was a plateau situated about sixty kilometres south of the city of Buenos Aires overlooking the Río de la Plata and near the natural harbour of Ensenada, which, with the cutting of a short access channel, could accommodate large vessels.

La Plata grew rapidly and by 1895, twelve years after its construction had started, it had 45,410 inhabitants. When the Third National Census was taken in 1914, the population totalled 100,981. The high wages paid by the construction industry, which attracted many immigrants, particularly Italians, were a factor in the city's rapid early growth.⁵ After 1890, when the importance of the port of La Plata declined owing to the installation of modern port works at Buenos Aires, the rate of growth slackened considerably.

La Plata today has a population of about 300,000. It is essentially an administrative and university centre,⁶ and an industrial city specializing in food products, clothing and building materials. Its proximity to the city of Buenos

⁴ The text of the bill and of the accompanying message are included in the publication of the Ministry of Education of the Province of Buenos Aires mentioned above.

⁵ See the study on "Population" by Robirosa, Vapriarsky and Segal, part of the *Plan regulador conjunto de los partidos de Ensenada y La Plata*, op. cit.

⁶ The University of La Plata was founded in 1905.

Aires (about 50 km.) has gradually converted it into an appendage of the Federal Capital, and many members of the liberal professions, teachers, university students and employees commute to their work in La Plata.

La Plata was the only planned new town built in Argentina during that period.⁷ It is in the form of a quadrangle covering six square kilometres and crossed by two perfect diagonals. The plan provided for the centre of the quadrangle to be occupied by a large plaza. A municipal building with no claim to architectural distinction and an immense cathedral in the Gothic style, not yet completed, face the plaza. The plan included an extensive park at the northern end of the town, in which two soccer stadiums and a race-course were later built. Other smaller diagonals were added to the basic plan to shorten the distances between certain points in the city to give the general composition a sense of grandeur by providing open vistas of certain buildings.

The plan of La Plata does not differ in its general features from those of the era. They seem unrealistic to us today owing to their exclusive concern with the physical appearance of the city and their neglect of economic and social considerations. The town was not planned to accommodate a specific number of inhabitants. However, it represented a significant advance over other Argentine urban plans of the period in that it deliberately made provision for a multi-purpose city which, with the assistance of public agencies, was to constitute an industrial, university and administrative centre and a port.

The city has now expanded beyond the limits of the original plan. The geometric layout originally envisaged by the planners has long since been distorted as the town's growth has spontaneously followed the lines of communication with the city of Buenos Aires and the uncontrolled suburban sprawl. Yet the original six square kilometres are far from fully occupied and the low overall density, with characteristic one-storey construction and a high percentage of vacant lots, attest to the absence of an effective land use policy.

The design of La Plata illustrates the strong influence exerted by the ideas of the French town-planners on Argentina, and Latin America in general, from the 1870s to the period between the two world wars. Perhaps the most outstanding French contribution was the creation of some of the largest, best situated and, despite their romantic inspiration, most pleasant city parks in Argentina. French influence is also to be seen in the diagonal thoroughfares and the boulevards laid down in those years, uniform in the height of their buildings and in their architectural style and designed to frame extensive vistas ending in monumental public buildings. On the other hand, there was no integrated approach to the city as a whole; all that the planners tried to do was to solve technical problems and individual problems of design.

⁷ The plan of La Plata was prepared by the Argentine engineer Benoit. The original plan did not include the sites on which the public buildings were to be erected; these were decided upon by the executive authorities of the province.

Formalism was the keynote of French city planning in those years and La Plata was no exception.

THE TWENTIETH CENTURY

In the twentieth century no major cities have been founded. In certain tourist centres which have sprung up along the Atlantic seaboard of the Province of Buenos Aires the landscaping may vary, but they too are the product of the individual efforts of the interests concerned. Private enterprises engaged in sugar cane or quebracho extract production have founded small settlements on virgin land adjacent to their mills and plants. They have built offices, warehouses, housing for the senior staff and some of the workers, in accordance with the paternalistic system. Camps springing up pell-mell at sites where the State has been engaged in exploiting natural resources, such as coal or oil, have grown spontaneously into settled towns and even cities.

In January 1944 the city of San Juan was almost totally destroyed by an earthquake. A few days later the Ministry of Public Works established the Technical Department of Reconstruction, which submitted in June 1944 a preliminary draft of a master plan for the new San Juan.⁸ To gain time, a preliminary study was submitted on the basis of the available information without a detailed analysis by the staff of the Technical Department. The preliminary draft, based on legal and economic considerations and taking account of the time factor, could have brought about a complete change in the structure of the new San Juan had it been put into effect. The basic idea was to relocate the city a few kilometres from its original site, within the same zone. As the entire province lay within a seismic area, there were no overriding reasons for abandoning the existing infrastructure or the vineyards and processing plants situated in the vicinity of the old town and the projected new one. The authors of the preliminary draft stressed the importance of the following factors: first, time—the relocation of the town would make it possible to begin construction immediately; secondly, cost—a new town would have cost approximately 45 per cent of the figure for reconstructing the town on its old site;⁹ thirdly, planning—the layout of the old town was not adapted to the implementation of an adequate plan; fourthly, legal considerations—they sought to avoid several thousand expropriation suits in an area where title to property was in many cases not very clearly established.

In July 1944 the national Government established the San Juan Reconstruction Council "to take all necessary action to reconstruct the zone affected by the earth-

⁸ With reference to the Town-Planning Commission of the former Technical Directorate for the Reconstruction of San Juan, see "La reconstrucción de San Juan", *Revista de Arquitectura* (Buenos Aires), vol. XXX, No. 293, May 1945, pp. 178-196.

⁹ The authors calculated that the reconstruction of the town on its old site would cost approximately 113,500,000 pesos and the construction of the new city 50,600,000 pesos. Those sums would have covered only the cost of expropriation, removal of debris, paving, and public services. They would not have covered the cost of new buildings.

quake". The Council's Planning Department was instructed to complete the studies and draw up a plan for a city erected on the site of the old one.¹⁰ Basically, the plan followed the layout of the town as it had existed prior to the earthquake, which included two groups of public buildings, one political and administrative and the other judicial, linked by a shopping sector. The building lines were moved back to widen certain streets. The plan included the redesign of the ring of railway lines which completely surrounded the city, providing for two stations, one in the north end and the other in the south, and allowing for the city's westward expansion. Attention was also given to redesigning the street network so that traffic passing through the centre of the town could be diverted by a ring road. The emphasis in the plan was on providing for regulating physical expansion of the town, and special attention was accordingly given to projects for new residential districts and an industrial zone. The relationship of the town to the regional economy was apparently not taken into consideration and it seems that social organization was also neglected.

Today there is nothing to distinguish San Juan from many other towns. The defects which could have been expected to result from its unplanned growth before the earthquake are very much in evidence. The new San Juan arose from the ruins of the older town without any attempt at innovation. The colonial draught-board is still the prevailing pattern; chaotic growth is continuing; the regional economy is still dependent exclusively on wine-growing; and the poor taste of architecture shows that the lesson of the past has not been learned.

Argentina is not a densely populated country but a large proportion of its inhabitants, totalling nearly 70 per cent, live in towns. In addition, the territorial distribution of the population is characterized by a heavy concentration in and around Buenos Aires and in a succession of industrial centres which link the nation's

capital with the city of Rosario. So heavy is the concentration in this narrow strip of territory that the average population density for the country as a whole, which is slightly higher than seven inhabitants per square kilometre, would be reduced by half if this industrial conurbation was discounted.

Argentina has no town-planning policy. The urbanization process in Argentina has as yet received no attention from either the national or the provincial authorities. It may therefore be assumed that, in the absence of guidelines or controls, the great industrial centres such as Buenos Aires, Córdoba and Rosario will absorb their own growth and will constitute poles of attraction for the population abandoning the rural areas. To a lesser extent the same will be true of Tucumán, Santa Fé, Paraná, Resistencia, Corrientes, Mar del Plata and Bahía Blanca and perhaps a few other towns less favoured by the still vague policy of the national government on public works and the exploitation of natural resources.

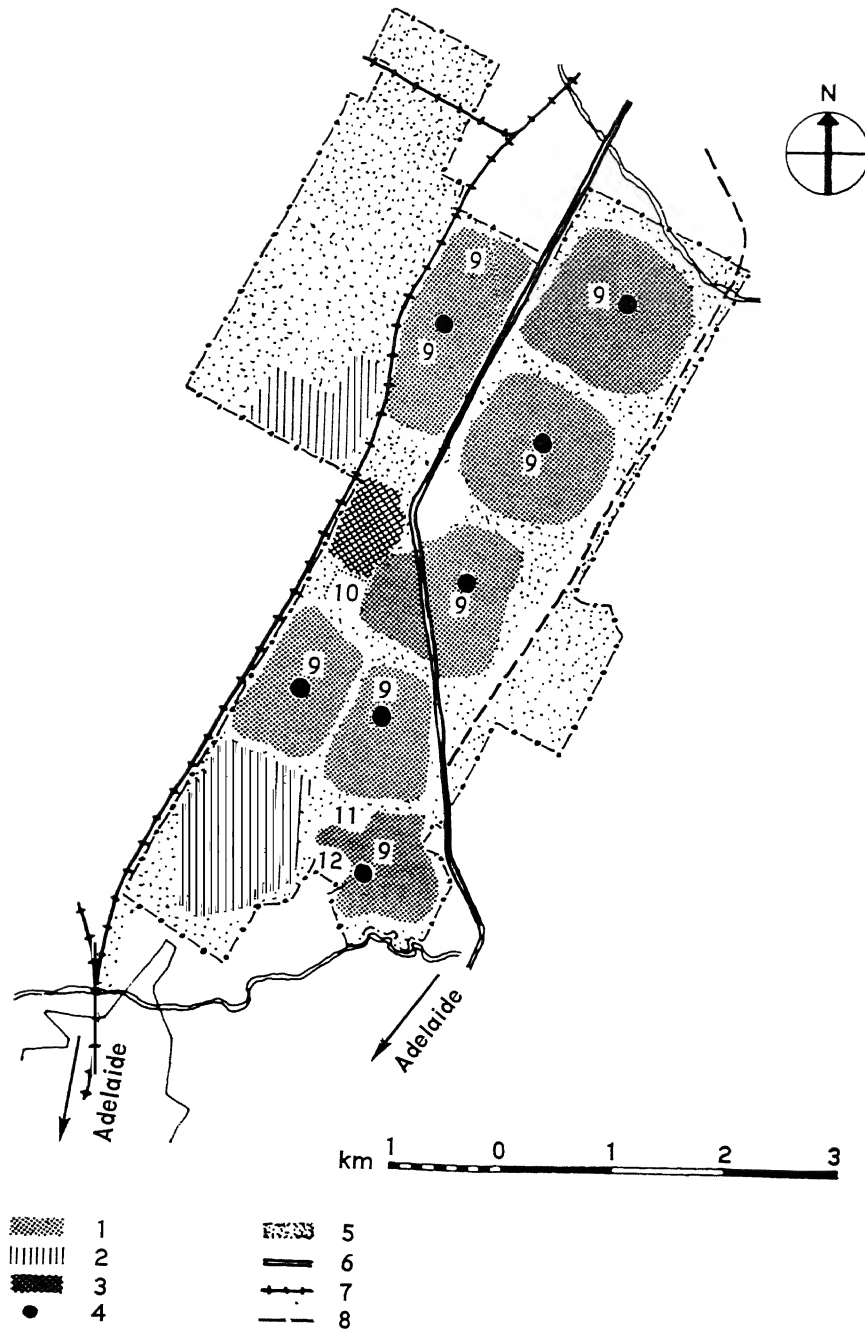
However, the urban agglomerations seems adequate for its functions. Argentina has no internal frontier as do the countries of the Amazon basin, and no changes in the national economy are foreseen over the short term. Some of the large hydro-electric projects, Colorados complex and the Salto Grando, or intensified exploitation of the country's oilfields or iron-ore mines, might necessitate changes in the regional urban networks and would certainly lead to the establishment of new towns. It is also possible that if at some time in the future the Buenos Aires-Rosario industrial conurbation or the growth of Córdoba, which is physically limited, is studied as a whole, the feasibility of building new towns will be considered. The situation existing in those two areas and the way they are developing would justify careful consideration of that alternative. For the present, however, there appears to be no urgent need to study either aspect, and the question whether future town-planning in Argentina should be based on the expansion of existing towns or the establishment of new ones has not yet reached even the discussion stage.

¹⁰ San Juan Reconstruction Commission, Department of Planning; "El planeamiento en la reconstrucción de San Juan", *Revista de Arquitectura* (Buenos Aires), vol. XXXI, No. 311, November 1946.

CONTEMPORARY NEW TOWNS

Compiled by the ATHENS TECHNOLOGICAL INSTITUTE

The following diagrams—all drawn to the same scale—clearly illustrate the kinds of form contemporary new towns are taking. Each is accompanied by a fact sheet, bibliography and, in some cases, neighbourhood diagrams

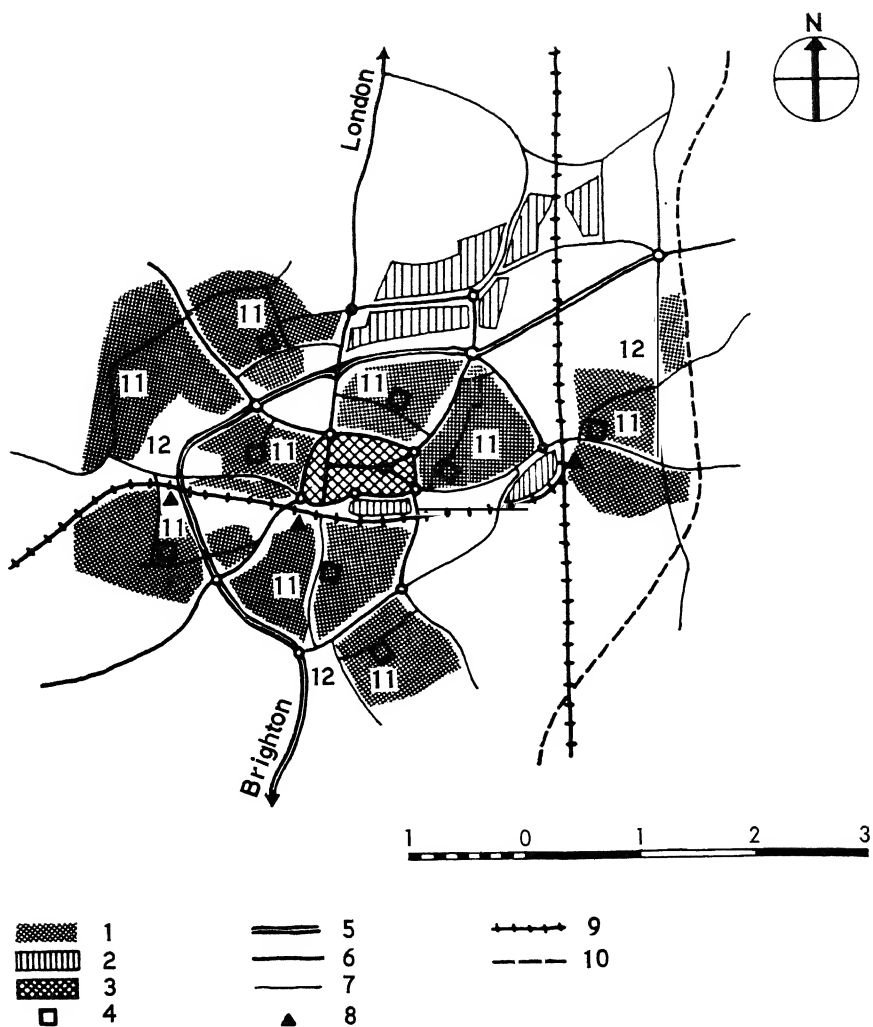


SOURCE: Harrison

KEY: 1: residential; 2: industrial; 3: city centre; 4: local centres; 5: open spaces and rural land; 6: main road; 7: railway line; 8: proposed by-pass road; 9: primary schools; 10: secondary school; 11: college; 12: hospital

Elizabeth, South Australia

Location: 17 km. from Adelaide; *initiative:* South Australian Housing Trust; *purpose:* to attract manufacturing enterprises and relieve Adelaide, a city of 500,000 people; *area:* 4,275 acres (1,710 ha), later increased by 3,000 acres (1,200 ha); *concept:* garden city; *target population:* for 1967: 50,000 persons; for 1975: 100,000 persons; *date of inauguration:* November 1955; *site:* level, on water pipeline, main highway and railway north of Adelaide; *planning:* neighbourhoods of 5,000 to 6,000 inhabitants each; city centre of about 80 acres; segregated pedestrian and vehicular traffic

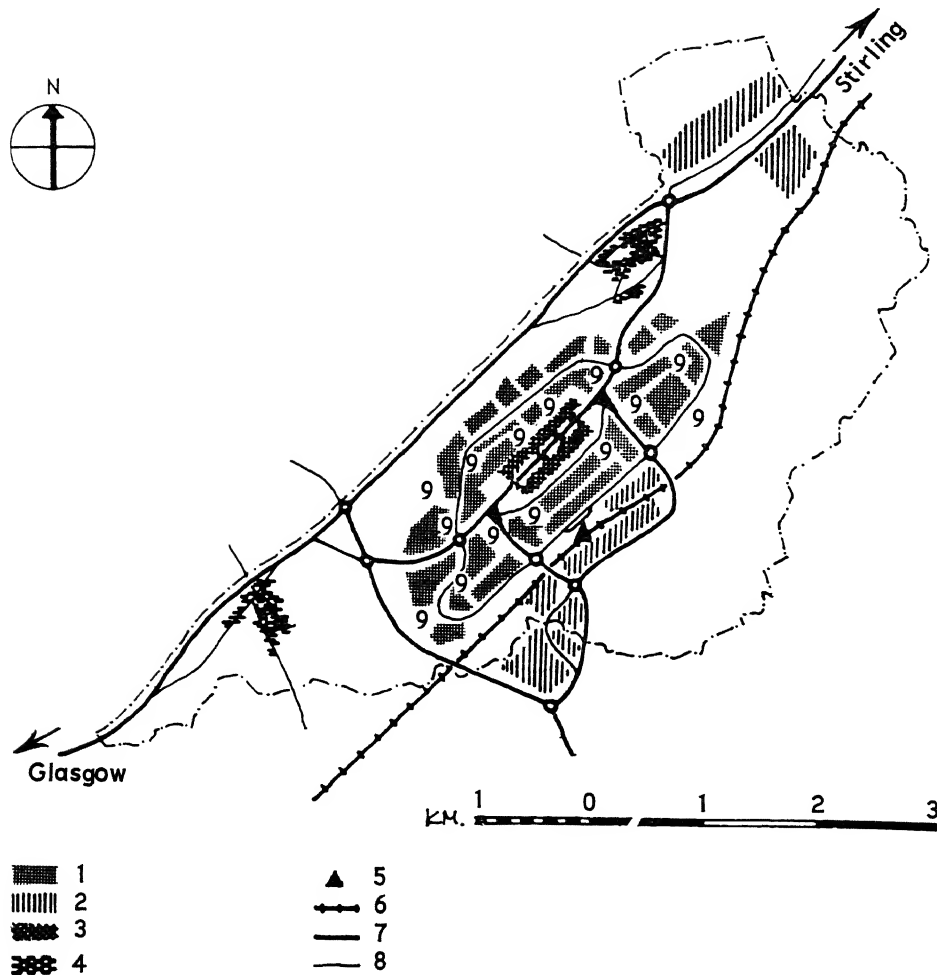


SOURCE: Rodwin Gibbert

KEY: 1: residential; 2: industrial; 3: town centre; 4: local shopping; 5: main artery; 6: major city roads; 7: access roads to local centres; 8: railway stations; 9: railway line; 10: provisional line of the Brighton radial; 11: primary schools; 12: secondary schools

Crawley, United Kingdom

Location: 29 miles (46.5 km.) from London, to the south; *date of designation:* January 1947; *existing development on the site:* three scattered communities with 10,000 inhabitants; *site:* level, with slight slopes; *target population:* 50,000 inhabitants; *planner:* Antonio Minoprio; *progress:* population: 54,000 inhabitants (March 1961); *planning:* nine residential units with a population of 5,000-8,000 inhabitants each



SOURCE: Bruckmann and Lewis

Key: 1: residential; 2: industrial; 3: city centre; 4: existing housing; 5: railway station; 6: railway line; 7: major roads; 8: secondary roads; 9: school sites

Cumbernauld, United Kingdom

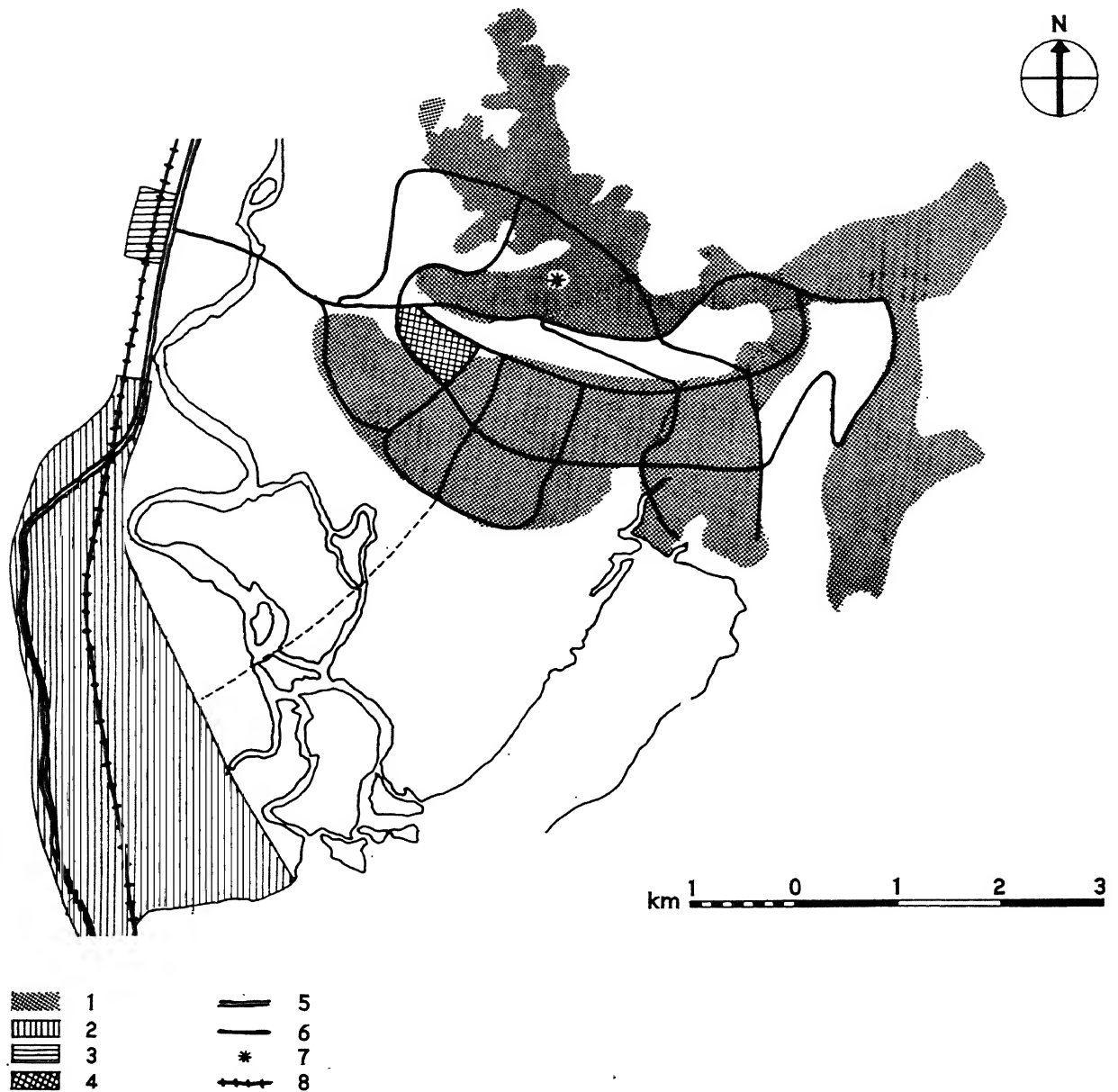
Location: 15 miles (24 km.) from Glasgow; *date:* 1955 (designation); *existing development on the site:* approximately 5,000 people; *planner:* Hugh Wilson, chief architect; *target population:* 50,000 inhabitants; *area:* 4,150 acres (1,660 ha); *planning:* higher densities (almost double) than in the other new towns (overall: 82 persons per acre); distinction between town and country; mixture of house types; vertical segregation of pedestrians and vehicles in the town centre; *development progress:* population: 3,000 inhabitants (1963)



SOURCE: H. F. Reedijk

Capelle on IJssel, Netherlands

Conurbation: Rotterdam: 730,000 inhabitants; *date:* 1962; construction to last 20 to 25 years; *estimated population at the end of the period of construction:* 160,000 inhabitants; *existing development on the site:* village of Capelle, with 10,000 inhabitants; *area:* 5,436 acres (2,200 ha); *site:* far below sea-level (six metres lower than Amsterdam)

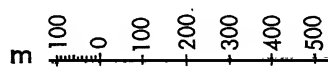
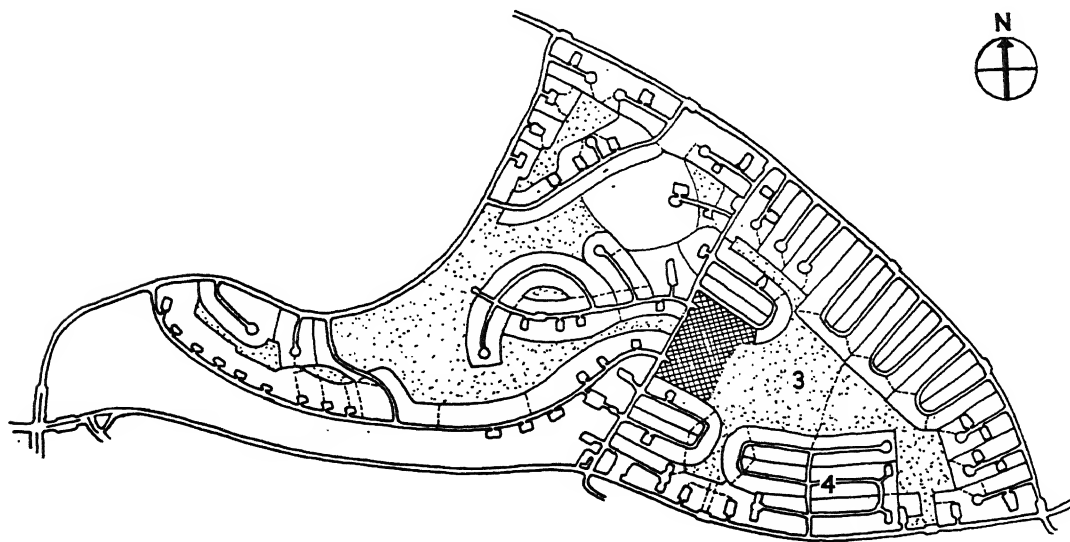


SOURCE: "Planning for recent new towns in Canada" by Lash

KEY: 1: residential; 2: industrial; 3: service industry; 4: city centre; 5: main artery; 6: major city roads; 7: neighbourhood enlarged; 8: railway line

Kitimat, Canada

Type of industry: aluminium; *location:* 150 miles (240 km.) from Kamano; *site:* on the Kitimat River; mountainous and heavily forested; all material except timber had to be imported; *authority for initial development:* Aluminum Company of Canada (ALCAN); *planners:* Albert Mayer, Clarence Stein *et al.*; *planning intentions:* to divide the town into neighbourhood units of about 1,200 to 6,000 people each



- 1.
- 2

SOURCE: "Planning for recent new towns in Canada" by Lash

KEY: 1: neighbourhood centre; 2: open space; 3: school; 4: park

Kitimat, Canada

Type of industry: Aluminium; *location:* 150 miles (240 km.) from Kamano; *site:* on the Kitimat River; mountainous and heavily forested; all material except timber had to be imported; *authority for initial development:* Aluminum Company of Canada (ALCAN); *planners:* Albert Mayer, Clarence Stein *et al.*; *planning intentions:* to divide the town into neighbourhood units of about 1,200 to 6,000 people each

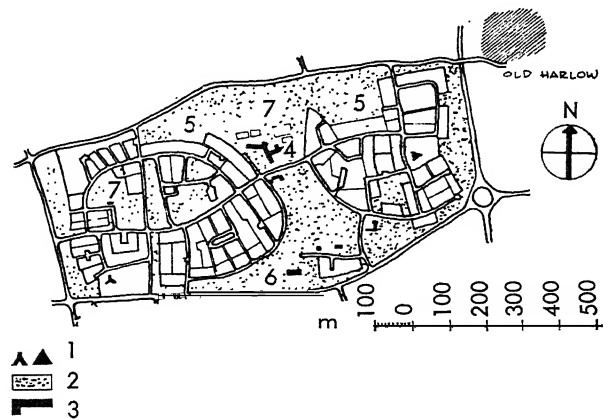


KEY: 1: residential; 2: industrial; 3: town centre; 4: main local shopping; 5: local shopping; 6: major roads; 7: access roads to the centres; 8: railway line; 9: primary schools; 10: secondary schools

SOURCE: Rodwin Gibbert

Harlow, United Kingdom

Location: 23 miles (37 km.) from London; *date of designation:* March 1947; *existing development on the site:* rural area; Harlow village: 4,500 inhabitants; *target population:* first proposal: 60,000 inhabitants; final proposal: 80,000 inhabitants (obtained by higher densities); *area:* 6,320 acres (2,530 ha); *progress of development:* construction began in 1949 and the first neighbourhood was built by January 1952. Population in March 1961: 53,500 inhabitants; *planning:* the town is divided into four residential units each with a population of approximately 20,000 inhabitants. These units are further divided into smaller units, thirteen in all, with a population of 3,500 to 6,000 inhabitants each

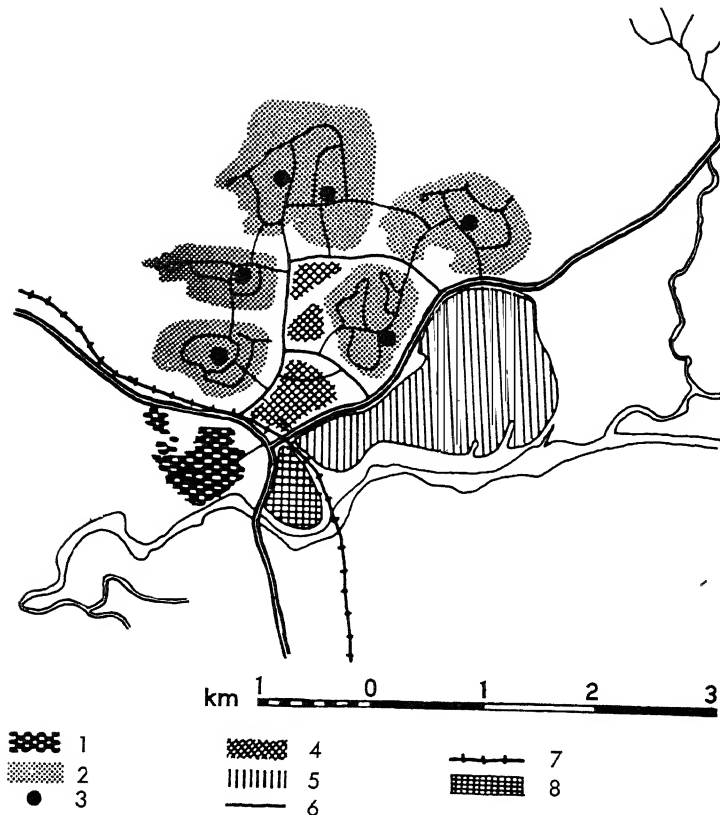


SOURCE: Auzelle Bruckmann

KEY: 1: tower buildings; 2: open space; 3: community buildings; 4: schools; 5: kindergarten; 6: church; 7: recreation

Harlow, United Kingdom

Location: 23 miles (37 km.) from London; *date of designation:* March 1947; *existing development on the site:* rural area; Harlow village: 4,500 inhabitants; *target population:* first proposal: 60,000 inhabitants; final proposal: 80,000 inhabitants (obtained by higher densities); *area:* 6,320 acres (2,530 ha); *progress of development:* construction began in 1949 and the first neighbourhood was built by January 1952. Population in March 1961: 53,500 inhabitants; *planning:* the town is divided into four residential units each with a population of approximately 20,000 inhabitants. These units are further divided into smaller units, thirteen in all, with a population of 3,500 to 6,000 inhabitants each

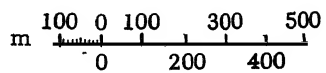


SOURCE: Sharon

KEY: 1: existing development; 2: residential; 3: neighbourhood centres; 4: city functions; 5: industry; 6: main arterial road; 7: railway line; 8: transport

Beersheba, Israel

Existing development: 5,000 inhabitants; *location:* at the gateway of the Negev; *target population:* 50,000-60,000 inhabitants

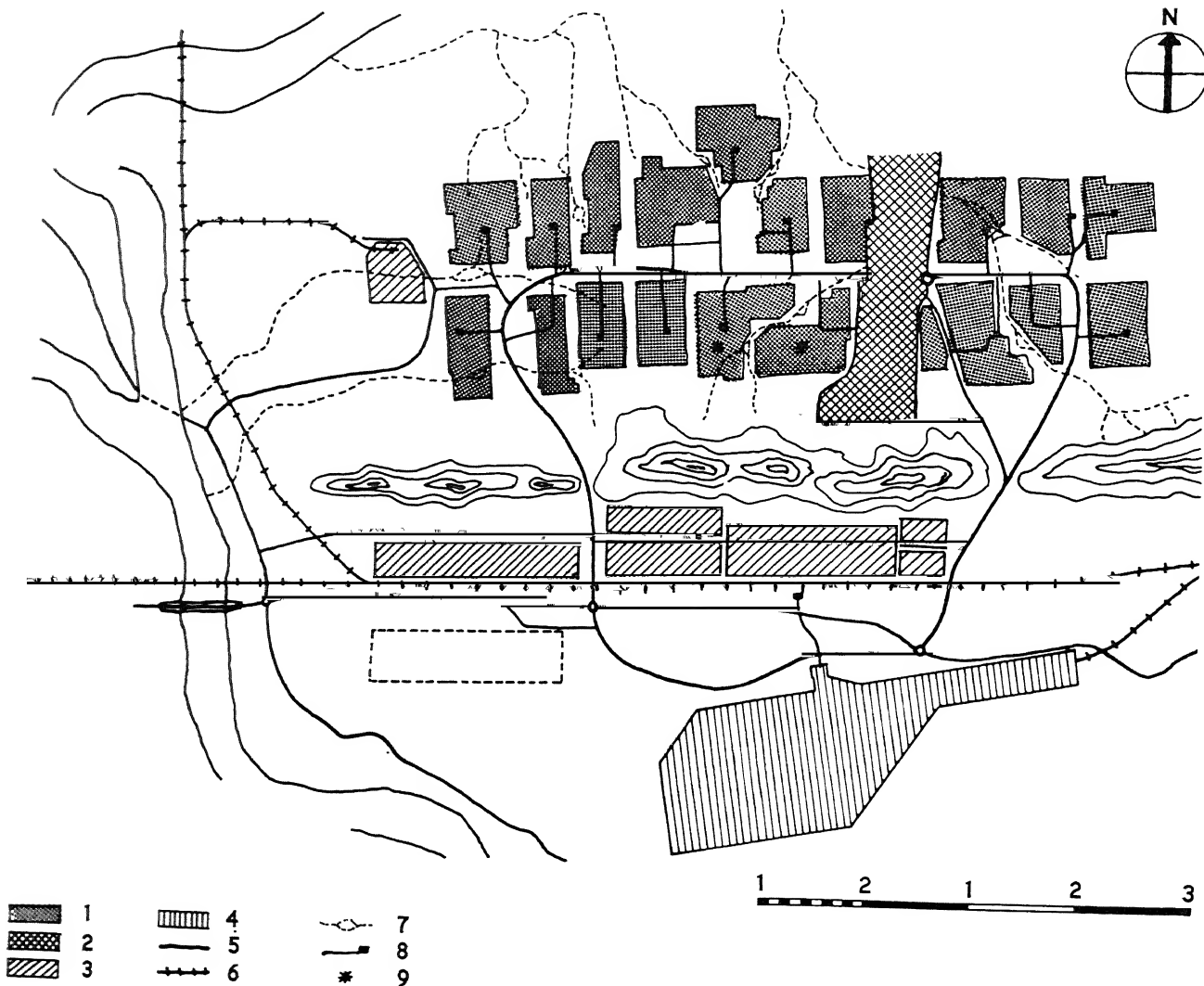


SOURCE: *Housing, Building and Planning*, No. 11

KEY: 1: shops; 2: cultural centre; 3: cinema; 4: office buildings; 5: schools; 6: kindergarten; 7: synagogue; 8: water tank

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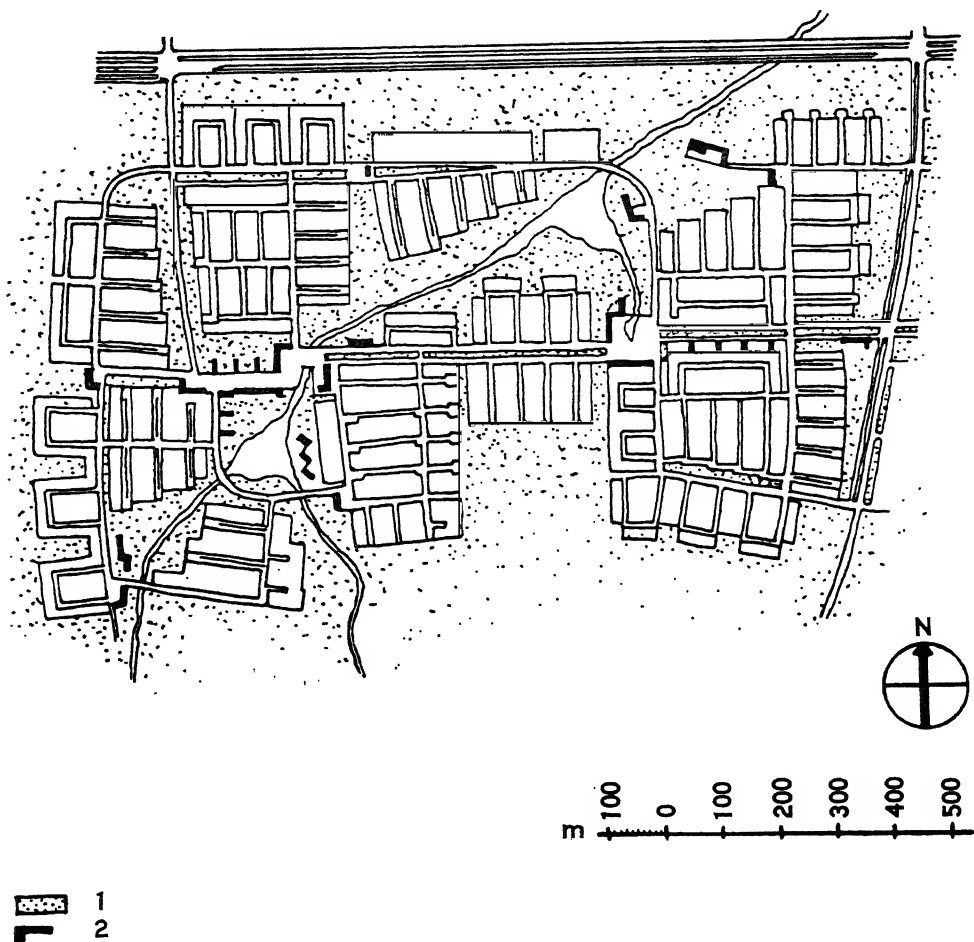


SOURCE: "XXIII International Congress for Housing and Town Planning", 1956

KEY: 1: residential; 2: city centre; 3: light industry; 4: steel plant; 5: major roads; 6: railway line; 7: watersheds and lakes; 8: access roads to the neighbourhoods; 9: neighbourhoods enlarged

Rourkela, India

Type of industry: steelworks, employing 15,000 people; *location:* about 260 miles (415 km.) from Calcutta; *existing development on the site:* peasant villages. Rice cultivation; *firms in charge:* steelworks: Krupp and Demag; city planner: Konrad Steiler; *planning intentions:* to separate the industrial area from the residential quarters; to create a high capacity ring road connected with the residential area from the residential area into small residential units separated by green strips which form a continuous network with pedestrian and bicycle tracks—each unit designed for 5,000 people; *programming:* population: approximately 100,000 persons; area: about 1,500 ha

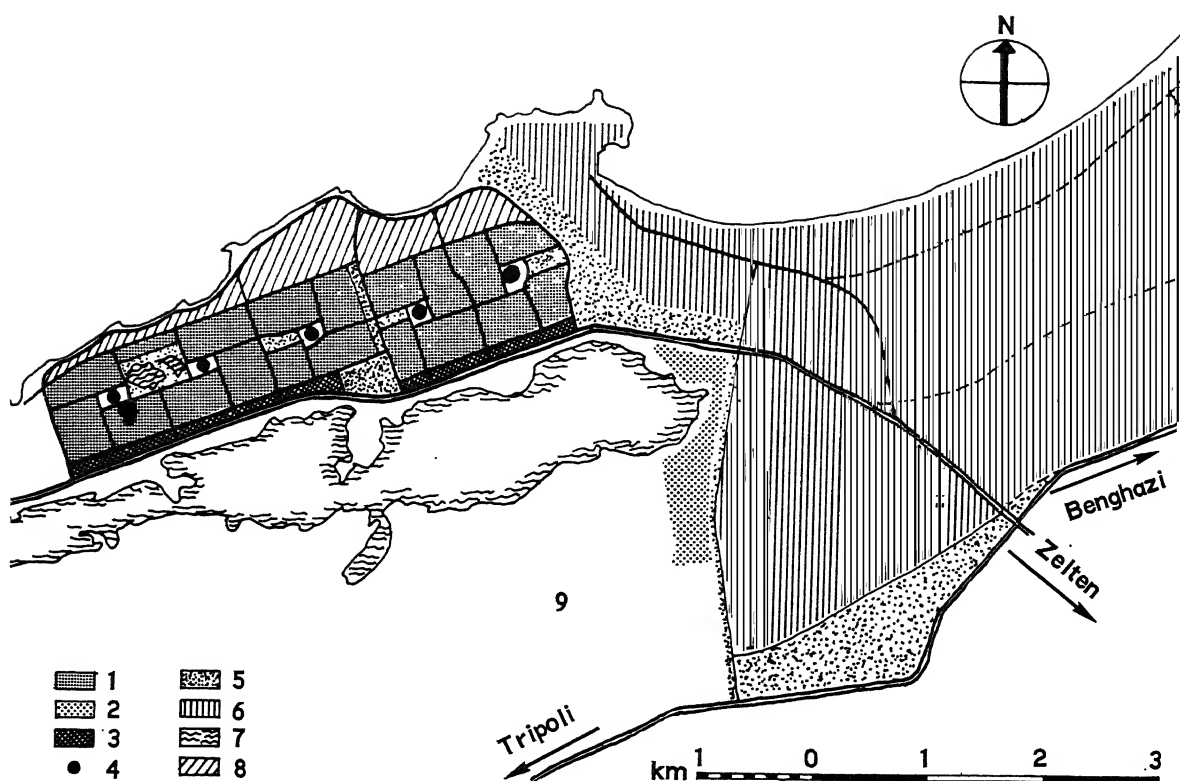


SOURCE: "XXIII International Congress for Housing and Town Planning", 1956

KEY: 1: open spaces; 2: community buildings

Rourkela, India

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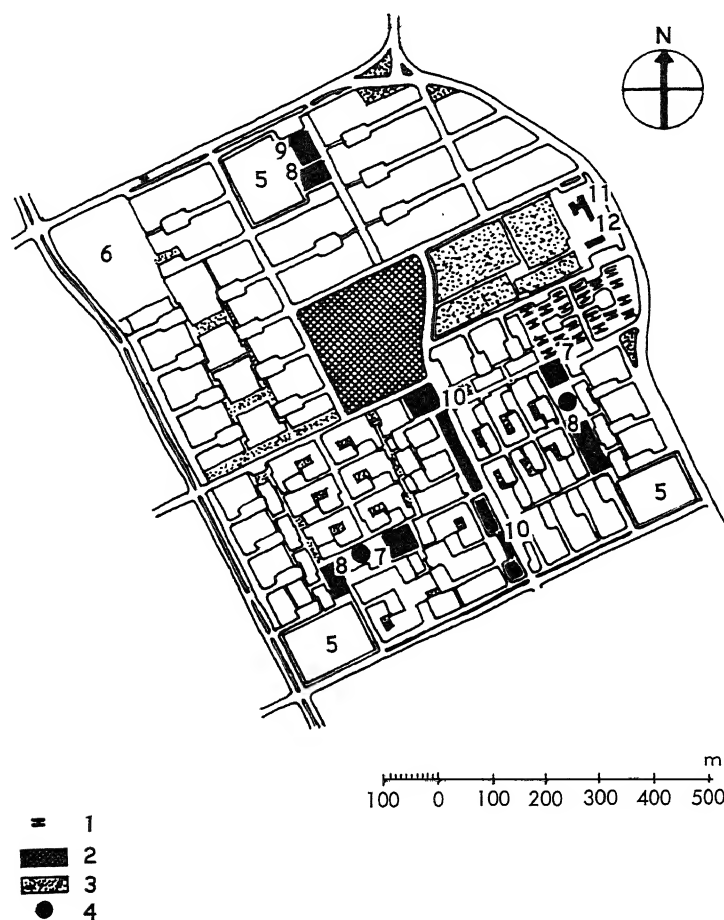


SOURCE: DOX-LYA 8 Doxiadis Associates

KEY: 1: residential; 2: special residential; 3: city centre; 4: local centres; 5: green areas; 6: industrial; 7: lagoons; 8: reserved area; 9: airport

Marsa El Brega, Libya

Type of industry: Esso Standard Libya Inc.; *planners:* Doxiadis Associates; *construction works initiated:* 1962; *existing development:* desert land; *location:* approximately 700 km. from Tripoli and 225 km. from Benghazi; *planning:* 2,130 acres. The residential area lies between the sea and the lagoon. It is subdivided into sectors, each accomodating 5,000 to 7,000 people



SOURCE: "The Development of Marsa El Brega", DOX-LYA 8 Doxiadis Associates

KEY: 1: dormitory buildings for single persons; 2: main centre; 3: green spaces; 4: local centre; 5: primary school; 6: secondary school; 7: mosques; 8: kindergarten; 9: church; 10: shops and workshops; 11: restaurant; 12: club

Marsa El Brega, Libya

Type of industry: Esso Standard Libya Inc.; *planners:* Doxiadis Associates; *construction works initiated:* 1962; *existing development:* desert land; *location:* approximately 700 km. from Tripoli and 225 km. from Benghazi; *planning:* 2,130 acres. The residential area lies between the sea and the lagoon. It is subdivided into sectors, each accommodating 5,000 to 7,000 people

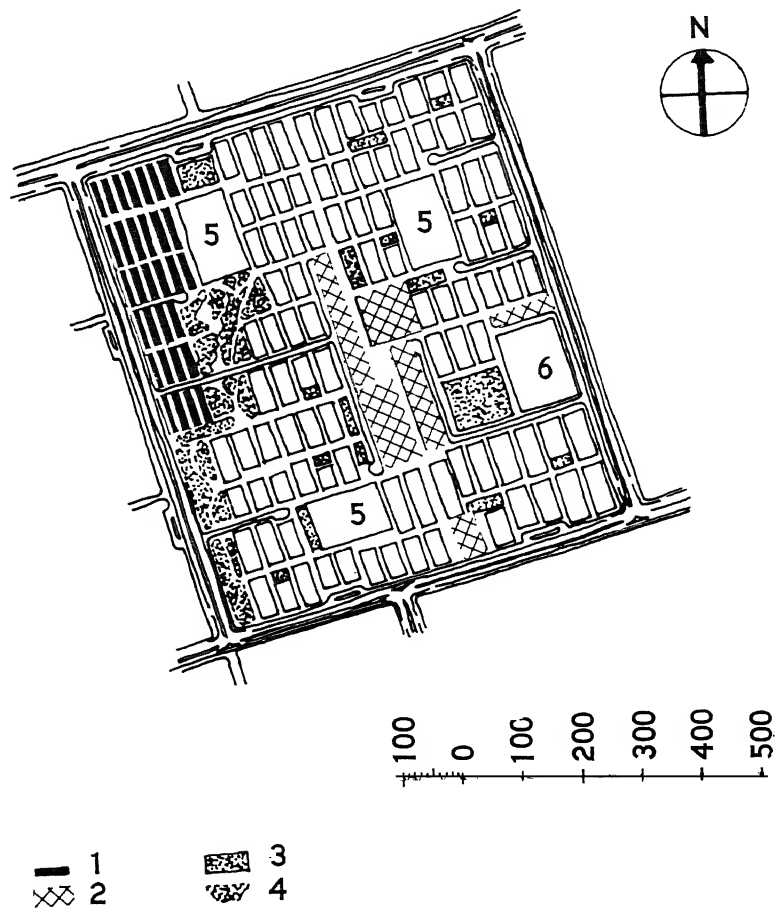


SOURCE: Document DOX-PA 147 (D-PA 3361)

KEY: 1: residential; 2: industrial; 3: light industry; 4: city centre; 5: local centres; 6: institutions; 7: special buildings; 8: parks, sports grounds, recreation; 9: irrigated lands — cultivations; 10: 300 ft. and 200 ft. roads; 11: railway; 12: enlarged neighbourhood; 13: Malir River; 14: P.A.F. airport; 15: special use

Korangi, West Pakistan

Conurbation: Karachi; planners: Doxiadis Associates; beginning of construction: December 1958; authorities responsible: Karachi Development Authority and the Pakistan Public Works Department; target population: 500,000 inhabitants; planning: part of the plan for Greater Karachi



SOURCE: Document DOX-PA 147 (D-PA 3358)

KEY: 1: pre-existing housing; 2: civic and commercial centre; 3: parks and playfields; 4: open space imposed by topographical features; 5: primary school; 6: secondary school

Korangi, West Pakistan

Conurbation: Karachi; *planners:* Doxiadis Associates; *beginning of construction:* December 1958; *authorities responsible:* Karachi Development Authority and the Pakistan Public Works Department; *target population:* 500,000 inhabitants; *planning:* part of the plan for Greater Karachi

THE SOCIAL FACTORS INVOLVED IN THE PLANNING AND DEVELOPMENT OF NEW TOWNS*

LESLEY E. WHITE

New towns reveal that many mistakes are being made through neglect of social priorities. Many schemes have fine architecture, greatly improved housing; but there are few examples of vigorous communities with a progressive range of social amenities. This paper seeks to outline and emphasize social plans, priorities and techniques of implementation and draws extensively on experience of British new towns where measures taken have met with considerable success in the field of community development.

DEVELOPING COMMUNITY

What is a community? Can it be created or must it evolve? How far is it affected by the physical framework, e.g. the neighbourhood plan? In face of the motor car and modern industrial mobility is the self-contained town and self-contained neighbourhood still a viable concept? Are the principles of community development capable of universal application or adaptation?

Community is an over-worked word. For some it has no more than a narrow physical or territorial interpretation—roughly synonymous with neighbourhood or locality. Others give it a richer social content. For them there is no true community unless the people involved have a sense of belonging to the locality and a sense of identity with each other.

In the past, communities have almost invariably evolved by natural means over long periods of time. But time is no longer on our side. The scale and tempo of construction can quickly outstrip the present leisurely pace of community development. It is quite certain, therefore, that planned measures will be increasingly required.

But a community cannot be successfully imposed from above or dictated from outside. It must spring from the new inhabitants themselves, though development authorities can do much to stimulate and encourage community life by wise and timely action. Conversely, by their failure to provide suitable meeting places, particularly in the early stages, they can frustrate and inhibit social life. The past history of development schemes in many lands is littered with such failures.

The term community development has come into international usage to connote the processes by which the

efforts of the people themselves are united with those of authorities to improve the social and cultural conditions of communities. These methods, first used to improve conditions in rural areas in under-developed territories, can be successfully adopted to new town development. Indeed, they are just as essential there. Precise techniques will depend on the level of development and the industrial and social background of the population involved. In encouraging interaction and partnership of people and authorities, the provision of suitable meeting places for new social organizations to develop is an essential priority.

NEIGHBOURHOOD PLANNING

One important factor controlled by the planning and development authority is the physical plan of the neighbourhood itself. A good neighbourhood plan will provide for shops, clinics, community centres, youth buildings, religious buildings, playgrounds, playing fields and health services. Sites should be reserved for the time when demand arises. A sound neighbourhood structure will facilitate social contacts and provide a flexible framework within which people may create and manage their own institutions.

Neighbourhood planning has been widely and uncritically adopted because it appeared to answer so many planning and social problems. It has been widely used in the first fifteen new towns in the United Kingdom. Now the neighbourhood idea is being subjected to intense criticism, and new ideas stemming from Cumbernauld are being widely discussed and accepted as a basis for further new towns in Britain.

In this ferment the critics of neighbourhood planning argue that the theory has been tried and found wanting. The supporters allege that the theory has been fully applied in so few places that no judgment can be made. Little scientific study has yet been made of neighbourhoods. There are reasons why this is so. Neighbourhood planning is more than the mere division of a town into geographic areas separated by natural boundaries or man-made barriers such as roads, railways or playing fields. It also provides a convenient framework for the distribution of essential local services—shopping, primary schools, health, social and community needs. It may also in some countries have local administrative functions and many would argue that it provides the best physical framework for community development. It is, therefore,

* Background paper No. 8 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.

a social as well as a purely planning concept. The question is one of timing. The physical development of a neighbourhood of say 1,500 dwellings can be quickly achieved. Some delays must occur before independent local community services can be established. Still a longer time must elapse before people put down roots and a living community begins to evolve. Too early an attempt to evaluate the results in social terms could lead to misleading conclusions.

Ever since the neighbourhood idea was first formulated, experts have argued as to how big it should be. Proposals range between 5,000 (or even less) up to 20,000. Those who argue for the small neighbourhood, say it is more cohesive and offers more intimate contacts between the inhabitants. Others argue that 15,000 to 20,000 people are required to support an effective and varied neighbourhood centre. Harlow has compromised ingeniously by dividing the whole town of 80,000 into four neighbourhood "clusters". Each of these clusters is made up of a group of two, three or four small neighbourhoods of 5,000 to 6,000, each based on the catchment area of a primary school.

Two desirable aims are thus achieved. In the smaller neighbourhoods, which remain the basic planning units, the primary school is brought within safe walking distance for the children, and the housewife is never more than one-half kilometre from a small group of shops. At the same time the neighbourhood centre placed at the principal focus within the cluster can support a very considerable range of community services. For example, Harlow's first neighbourhood centre contains over forty shops, post office, bank, health centre, church and hall, community centre, restaurant and dance hall, branch library, playing fields and workshops for service industry. All these services will thus be within one kilometre of the furthest residents. In practice this appears to work out well and the strong social focus provided by the centre has been an important element in forming the social life of the neighbourhood.

Some will no doubt argue that the over-all size or population of a neighbourhood is less important than its layout and the juxta-position of dwellings which it contains. Here again the evidence is conflicting and more research is needed. Moreover, considerable latitude must be allowed for differences of climate and social tradition.

In assessing catchment areas for social and residential facilities, we should bear in mind the mother pushing the pram or carrying the heavy basket of potatoes. Yet self-contained neighbourhoods are beginning to emerge at a time when the current transport revolution appears to be rendering the whole concept less valid. It is important, therefore, to look again at this idea of self-containment and review our social requirements to determine those features which (a) must go within the small neighbourhood of say 5,000 people; (b) require a bigger catchment area, e.g., a neighbourhood cluster of 15,000 to 20,000 people; and (c) should belong to a town centre.

Since young children, mothers with young children, and old people are the least mobile groups in the popula-

tion, we should expect to find within the small neighbourhood those services which meet their regular needs. Of these, the most important is the primary school and a very small group of shops (or perhaps one of the village general-store type). In addition, there should be playgrounds for outdoor play, a nursery or kindergarten and a small social centre as a meeting place for primary groups.

It cannot be too strongly emphasized that the town plan itself is only a physical framework and will not necessarily produce a living community. People in partnership and association with authorities bring the plan to life.

FEATURES OF A COMPLETELY NEW TOWN

If the town is intended to be basically self-contained, the operation is as wide as life itself—nothing can be overlooked or omitted. All services must be provided by the appropriate authority or agency in orderly sequence and in step with population growth.

Employment. The provision of employment in industry or commerce is the key to the development of an independent new town. It is also essential to strive for balance and diversity in the industrial pattern.

Homes. A progressive housing programme is essential to match changing household structure and to meet the needs of differing income and social groups. Dwellings should be planned with appropriate space standards. Dwellings must be available at rents or sale prices which newcomers can afford. This will pose one of the biggest problems for the developing agency. Building costs are high and rising in most countries and there will be a constant battle to keep rents and dwelling prices down to a level the population can afford.

Education. In the early stages some improvisation may be required and a flexible programme to deal with short-term bulges in the child population will also be necessary. In the British new towns, prefabricated portable classrooms have been used to overcome this problem.

Health services. Here, too, some improvisation may be required at the outset. There is much to be said for planning a completely integrated health service in consultation and association with the appropriate authorities. This has been done with great success in Harlow, where family medical centres provide accommodation for doctors and dentists in general practice and where the general practitioners staff the clinics of the local health authority. In addition, a close link with the Industrial Health Service has also been achieved.

Shopping and marketing. There is need for early provision of neighbourhood shopping facilities. It is difficult to attract shopkeepers before they can make a reasonable living. It is possible to build progressively from a small local shop or travelling to a larger and more varied pattern in neighbourhood centres, and finally to the town centre with its major facilities.

Recreation. As technological change brings increasing leisure-time, it will be necessary to progressively develop

more varied forms of recreation, including social centres, clubs and youth centres, playing fields, children's playgrounds, libraries, cinemas, television rooms, cafes, restaurants, swimming pools, etc.

Transport and communications. Despite expanded use of the private motor car, an effective public transport system must be developed from the outset, and progressively extended. In addition, great care must be taken to secure safe, convenient pedestrian walkways and effective segregation of automobiles from both housing layouts and shopping centres.

TEAMWORK AND BALANCED DEVELOPMENT

It is important that a social development officer should be a member of the planning team from the earliest stages to help prepare for a healthy social environment. He will also do preliminary social research and demographic studies for the plan and its implementation. Also, it is the custom in British new towns for the majority of the planning and executive staff to live in the town. They and their families are thus identified with its needs and play a constructive part in the development of social life. This is of great value in the early stages when other sources of leadership have only begun to emerge.

As development proceeds there should be continuing social research to evaluate results and guide future policy. It is preferable for some research of this type to be carried out by universities or research institutions. Special emphasis must be given to demographic research. Accurate forecasts and population projects are indispensable (a) to determine a flexible housing programme to meet changing needs; (b) to assess the need for health and education services and all other community facilities; (c) to help balance housing and employment (useful to businesses as well); (d) to anticipate and minimize problems created by abnormal age structure and other imbalances which seem to characterize all new communities.

Although the long-term aim must be to secure a balanced age and social structure, it is clear that the forces making for imbalance are very strong. Even the British new towns which have striven for these objectives from the outset have found difficulties. For example, until recently nearly 20 per cent of Harlow's population was under five, and nearly 40 per cent under fifteen, while the birth-rate was approximately twice the national average. Hence it is wise to plan that in their early stages new towns will be family and home-centred towns with a very high proportion of young children, while in the following decade they will likely have an abnormal bulge of adolescents for whom work and scope for leisure-time activities must be found. This may be followed by a demand for dwellings to house the second generation of the new town's citizens.

It may well be found that special measures are necessary to promote balanced community in both age and social structure. It may be wise to build specifically for elderly people and encourage them to come with their families at the outset. Even if a number of dwellings suitable for elderly people are built in the early years of

development, there is no guarantee that they will come, particularly to a new town where the normal qualification to obtain a dwelling is employment in the town. Once these elderly people reach retiring age (sixty-five) experience in Britain shows that they are often interested in joining their children who moved to the town about ten years previously. It is important to encourage this. Not only is the family reunited but the age balance of the town is improved.

ADAPTING TO THE NEW ENVIRONMENT

For some families the challenge of change may develop initiative and social responsibility. For others the massive uprooting and severance of kinship ties may produce both individual and social stresses, especially among the emotionally insecure.

It is sad to reflect how often a promising start turns to frustration and disillusionment because simple and elementary steps to prepare for the move and ease the problems of settlement have been neglected by the authority. When people from slum clearance areas are moved to a totally new environment, the change is drastic and great care must be taken to prepare for the move.

Particularly if the move is compulsory there should be full and timely explanation of the reasons and advantages for it. Prospective tenants should be visited in their old environment so that their needs can be assessed and their problems discussed. Exhibitions can be arranged. Talks can be given. A tour of the new town is highly desirable, and should include an inspection of dwellings similar to those they may be offered. The wives should look at the new shops, and countless questions should be answered about schools, health services, entertainment and community services. A coloured leaflet on the town and its amenities may be given to prospective inhabitants. Where the migrant population comes from slum clearance areas or shanty towns, more intensive and elaborate programmes of education and preparation for the move will be required. These can include classes, films and demonstrations in home-making, including care of new equipment.

Many practical steps can be taken to assist the process of settling in. Trained housing staff can offer many friendly services far beyond allocating dwellings and collecting rents. The importance of the service they render cannot be overemphasized. In Harlow an illustrated information leaflet, issued to each new tenant, contains a map of the town and environs, a list of health, educational, community and local authority services, churches and voluntary organizations. There is an explanation of the master plan and a section is devoted to the story of the town to date. It includes practical advice on care of the new dwelling and its equipment, and helpful suggestions on laying out a new garden.

Newcomers from slum-clearance areas with little furniture may find furnishing a new dwelling almost beyond them. Equipment on rental, hire purchase, or "do-it-yourself" methods may all help to solve this problem, though families should be discouraged from overtaxing

their financial resources. Some Scandinavian countries have set up design centres offering advice on furnishing.

An information office may be of great service; the Harlow office answers some 10,000 enquiries a year. In some British new towns the development corporations arrange small parties or receptions from time to time to welcome new residents. In Harlow this is done instead by the community associations who invite speakers from the Development Corporation, and Town Council. Some of the many clubs, societies and voluntary organizations visit new residents and welcome them into membership. The churches also play their part.

It is hardly surprising that with all these sources of information and assistance the British new towns are regarded as friendly communities where it is relatively easy to settle.

"As one visits the homes of the people in Harlow, as one works with them year in and year out, one is continually struck not with their difference from the rest of the community but with their similarity. These are not migrants running away from a difficult or intolerable situation, but ordinary citizens whose jobs have suddenly moved and they have moved with them. Many have found it hard to settle down, as they would have done had they moved anywhere else. But in two years, the great majority have found New Town life not only tolerable but good. They have learned to adopt a pattern in which personal participation plays a larger part than in the past. And they would not return to the old pattern, even if they could."¹

Lest this picture look too encouraging it must be realized that these services of information and welcome took some time to develop. The earliest settlers had more primitive conditions, very few amenities and only the doubtful consolation that they were pioneers. And, despite all the efforts made, some of the vulnerable families find it difficult to adapt themselves to a wholly new environment. New homes and equipment, higher living costs, new standards and ways of life and the complexities of a modern community, may overwhelm them. Doctors, social workers, welfare officers, clergy, can all supplement the work of housing management. But if a substantial population is being moved from slum-clearance areas there may be a strong case for the early establishment of a family casework agency to support problem families and to continue the educational programme of child care, health and homemaking.

ENCOURAGING COMMUNITY DEVELOPMENT

There are broad principles of community development which can be adapted to almost any country. It will be illuminating to recount the story of community development in Harlow.

The agency responsible for developing the town, the Harlow Development Corporation, has not itself engaged directly on extensive community development. Instead it

has made available a few strategically placed buildings in each neighbourhood to be administered by the organizations, clubs and societies which the local community has itself created. The Corporation has encouraged the local authorities, the Urban District Council and the County Council, together with appropriate national and local voluntary organizations, to come together in partnership with the local residents to establish a wide range of community organizations suitable to a young, active and growing town. Never has the Corporation attempted to dictate or influence the pattern of social development. This has been left to the free interplay of local initiative and leadership. Thus, the evolving pattern would appear to reflect the needs and aspirations of the new inhabitants. As might be expected the pattern which has evolved follows very broadly established national traditions. At the same time this framework has allowed for variation and experimentation. (For example, the pattern of family centres for the medical services has no exact counterpart in Britain or elsewhere, though it is now regarded as a model scheme for new communities.)

Only a small specialized staff of one or two persons has been employed by the Corporation in community development work. Their task has been to foster and encourage every type of local community organization, offering advice and experience rather than financial help and support. The policy of initial support followed by progressive withdrawal as new organizations become established required considerable finesse. On the one hand there was the danger that continuing support might lead to paternalism. On the other hand, premature withdrawal might lead to the collapse of a promising new venture.

At the outset of building in every neighbourhood the Corporation provided a small general-purpose hall seating sixty to eighty people with a committee room and kitchen.

In most new neighbourhoods the first development took the form of a tenants' or residents' association to ventilate grievances, to form a channel of communication and to solve the problems of settling in. This the Corporation encouraged. Responsible leadership emerged and a useful working partnership was achieved. In most cases the tenants' or residents' association developed into a more broadly based Community Association. Then came gardening and horticultural societies. Most of the factories produced a social club and a football team.

The first tenants' common room in Harlow was used by nearly forty organizations, many having been launched there. This paved the way for the first community centre, and led to rapid development of religious bodies, trade unions, women's groups, drama societies and youth organizations. The first parent/teacher associations began in one of the schools.

Thus the social life of the first neighbourhood developed. Useful precedents were established. New leaders found their feet. Many organizations formed in early days were designed to meet neighbourhood needs and were really town bodies which later sought their own

¹ Great Britain, Royal Society for Health: Chadwick Lecture by Lord Taylor, 1963.

central headquarters. In a town so young as Harlow there are few retired and leisured people. Were it not for the considerable proportion of professional people already resident in the town, it would be difficult to sustain the activity which goes on. The majority of teachers in the town's twenty-five schools live in the community and have made a most impressive contribution to social life.

The next stage was the formation of comprehensive town organizations such as the citizens' advice bureau, old people's welfare association, council of social service, theatre guild, music association, council of churches and a central sports trust.

The present variety and vitality of Harlow's social life apparently owes much to the timely provision of premises in the first part of the town, in particular the tenants' common rooms and the community centres. After early experiments in control by tenants' associations, the common rooms are now mainly administered by community associations, though their work has been handicapped because so many efforts had to be devoted to raising money to maintain the premises.

This problem of finance affects nearly all the voluntary organizations and continues to pose a problem for the future. Many new projects look to the industrialists, the Corporation or the Urban District Council for support. Although the Development Corporation was not encouraged to give financial help they have given much help in the background. Some industrialists have been extremely generous, though others have helped less than had been hoped. In recent years the voluntary organizations have looked to the local authorities for financial help, and this has come increasingly from the Harlow Urban District Council and the County Council. This is natural for they are the elected representatives and must in time replace the Development Corporation.

In the early years it was inevitable that much of the initiative for community development should come from the Development Corporation. At that time there was only a remote Rural District Council and four Parish Councils. Since its inception in 1955 the Harlow Urban District Council has played an increasing part in providing services for the town and in fostering community development. Despite the heavy financial burdens involved, they have already provided nearly forty playgrounds, a wide range of playing fields, a first-class indoor swimming pool, as well as a generous contribution towards the Sport centre. Another important aspect of the Town Council's work has been the support of public entertainment and cultural events. The Council is developing a combined arts centre with provisions for music, drama, ballet, etc.

Essex County Council has also played an important part in community development. Although the Development Corporation provided the bricks and mortar for the first three community centres, the County Council, as Local Education Authority, provided full or part-time wardens and financial assistance towards running costs. Now, however, the Local Education Authority has purchased these three community centres from the Corpora-

tion and made them available, rent free, to the community associations. In addition the Education Authority has provided youth centres in the secondary schools, carrying the full cost of leadership, equipment and maintenance. The halls of the secondary schools and the Technical College have been used for music, drama and ballet.

One of the most interesting examples of inter-authority co-operation in community development was the tripartite scheme in which the Essex County Council, Harlow Urban District Council and the Harlow Development Corporation each contributed towards a community centre, branch library and sports pavilion to serve one quarter of the town. A similar pattern of co-operation is evolving in the build-up of the Sportcentre. The first initiative was taken by a voluntary organization, the Harlow and District Sports Trust. Now they have secured grants from the Ministry of Education, Essex County Council, Harlow Urban District Council, Harlow Development Corporation and strong support from local industry and commerce and local residents.

When it is recalled that only twelve years ago Harlow was a rural community of 4,000 people with no more than the social apparatus of a village, the growth of social organizations has been highly encouraging. This is all the more surprising when we remember that Harlow is a town mostly of young married couples with young children. It is, therefore, a home-centred town in which many people are prevented from playing their full part in social life because of their children. Perhaps the social life has flourished because of the paucity of commercial entertainment, or because of increased leisure-time, since few people have a long journey to work.

There is little doubt, however, that one of the principal reasons for the satisfactory build-up of local community life has been the emphasis placed on it by the Development Corporation, the Urban District Council and the County Council. The presence of so many voluntary organizations all welcoming new members has also helped to give Harlow the reputation of a friendly town.

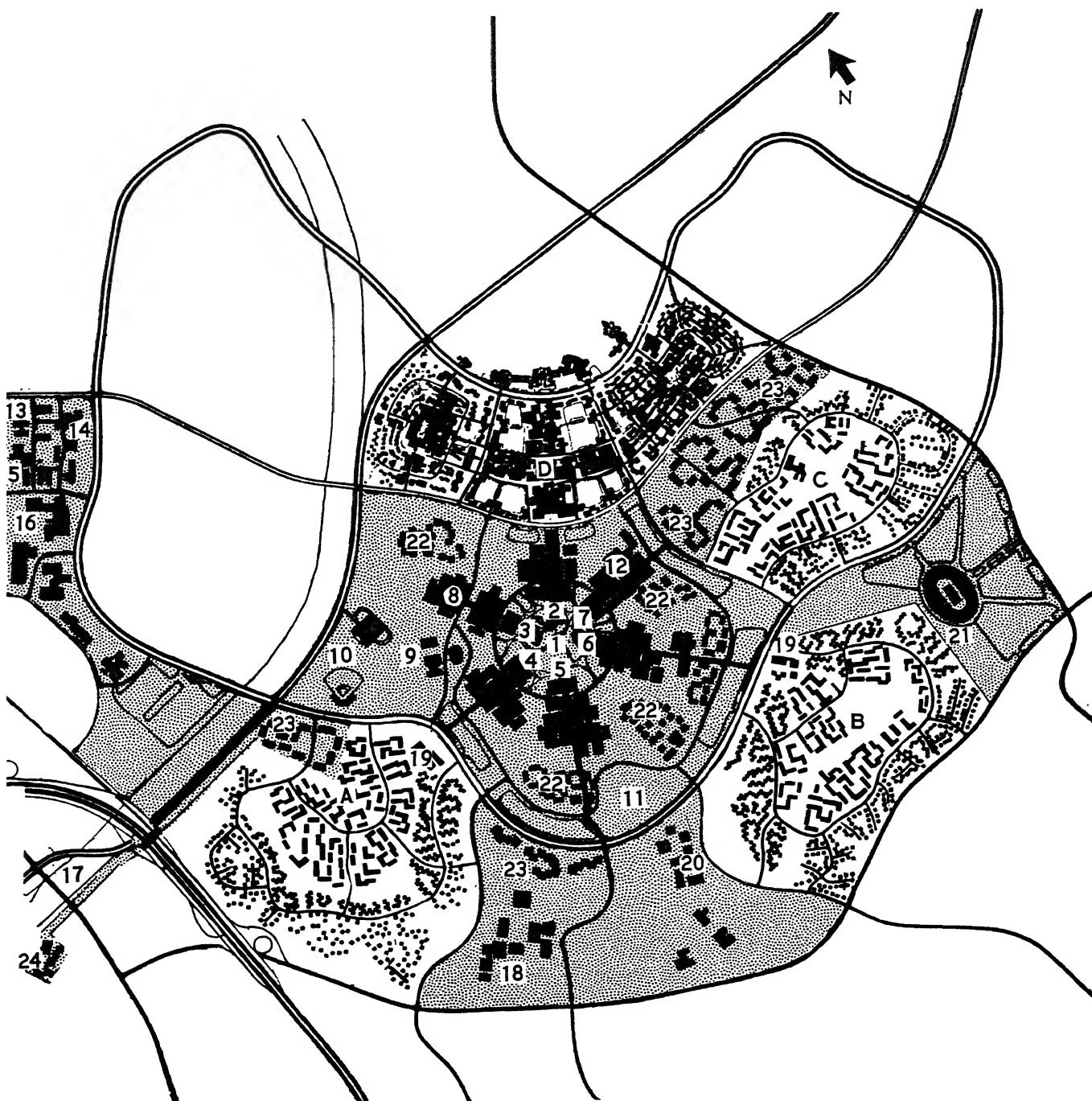
Although much remains to be done before a real community with strong local pride and civic tradition is firmly established, the experience of these early years offers much hope and encouragement for the future.

PROVISION FOR EARLY NEEDS

The early years are the most critical for community development. It is in these early stages that the battle is won or lost. It is here that imaginative and timely action can lay the foundations for an enduring community, while failure to provide for the social needs of the new population can give the new area a bad reputation from which it may not easily recover.

Experience in new towns and housing estates in the United Kingdom suggests that the early requirements of the incoming population will include such simple practical essentials as:

(1) A tenants' handbook or town guide, including map;



Key: 1: University park — campanile, Greek theatre, lake, bandstand; 2: campus core — plaza, library, administration, student union, gallery, museum; 3: humanities; 4: life sciences; 5: physical sciences; 6: engineering; 7: social sciences; 8: fine arts — environmental design; 9: gymnasias; 10: athletic fields; 11: open area; 12: conference centre; 13: law — administration — education; 14: interim office; 15: corporation yard and storage; 16: University press; ancillary functions; 17: aquatic park; 18: hospital complex; 19: service centre; 20: University institutes; 21: stadium; 22: single student housing; 23: married student housing; 24: park
Campus area: boundary of campus indicated by dotted area
A, B, C: campus community; D: town centre

Irvine, California: university-based new town

Irvine is beginning to arise as a consequence of a new campus of the University of California. Planned for 27,500 students, the campus dominates the new-town centre shown in the upper segment of the plan drawing. The new town's population will exceed 100,000 at the turn of the century. The design reveals the subordinate and closely co-ordinated function of the town to the University

- (2) A public telephone box;
- (3) A post box with stamp machine;
- (4) Street lights;
- (5) A surfaced path or road to shops and essential services;
- (6) Local bus service when necessary.

Other essential facilities which must follow quickly are:

- (1) Infant and primary school;
- (2) A corner or travelling grocery shop;
- (3) A welfare office and doctor's clinic;
- (4) A general meeting room for residents;
- (5) An all-purpose office, which can be used at different times by different officers, e.g., the housing manager, representatives of the main supply services, a citizens' advice bureau worker or peripatetic officers from such agencies as National Assistance Board or health visitor.

Some of these earliest needs must be met by improvised and temporary buildings until more permanent provision can be made. For example, a portable temporary building can provide accommodation for the meeting room, clinic and office. This policy of improvisation has been successfully used in most of the new towns in the United Kingdom. Among the many examples are the following: factory shell used as a temporary cinema; large existing houses used as temporary primary schools; garages converted and used as temporary shops; old houses converted for temporary youth and community centres; existing farm buildings adapted for Boy Scout headquarters; gravel pits converted into adventure playgrounds; dwellings converted for temporary health clinics.

An outstanding example was the conversion of a nineteenth-century vicarage into a community centre. This old building was no longer needed by the church; it had many rooms, stables and out-buildings and extensive grounds. The Development Corporation carried out the first stage of the conversion and added a small hall. Further additions and improvements were subsequently made by the Community Association to whom the building was leased. In the first few years of the town's life this old building and its grounds served not only as a community centre but provided accommodation for the first branch library and information office, health clinics, a dance hall and temporary theatre. Several religious denominations held church services there. The first trade union branch meetings took place there. The newly-established Town Council held one of its first meetings in the hall. In addition, a number of statutory services found their first headquarters there. The grounds of the house were used by travelling fairs and for outdoor events. The first tennis courts in the town were provided there, as was a small children's playground. In one of those early years there were nearly 1,000 lettings of the

hall and the old house to some of the fifty organizations affiliated with the Community Association.

Although much can be done by improvisation, temporary arrangements are second best; they must not be allowed to be permanent.

Social habits and recreational patterns are undergoing great changes today and no one can forecast future trends with certainty. It is unwise, therefore, to plan rigid monumental buildings. Extendable mobile buildings in unit form are now widely available and can provide more flexibly for the developing needs of the future. With careful siting and good landscaping they need not look out of place. Although sometimes classed as temporary buildings they may have a useful life of up to thirty years.

PRINCIPLES OF COMMUNITY DEVELOPMENT

The following broad statement summarized the principles of community development which may be adapted for use in countries of widely divergent tradition and background.

(1) Community development cannot be left entirely to authorities; equally it is unlikely to flourish if left solely to the local residents. It requires a willing and active partnership between the two;

(2) Some simple buildings for community use, playgrounds and open spaces, should be provided at the outset. More elaborate buildings and facilities can be developed gradually to reflect expressed demand. Local management and financial responsibility should be encouraged from the beginning, though the burden should not be greater than the community can bear;

(3) Authorities can assist greatly by priming the pump financially and by providing advice and help until local finance and leadership are adequate;

(4) There is merit in arranging for one authority to carry some over-all responsibility for social and community development and there is a strong argument for making officers available to assist in this work;

(5) There are great difficulties in fostering community life in wholly one-class areas. A mixed and integrated community will provide most of its own leadership;

(6) Because of the key position occupied by industry today, every effort should be made to draw industry into the life of the local community.

When the whole social apparatus of a town has to be created in a short time from infinitely small beginnings, this clearly represents an immense challenge. At the same time where the authorities have a sympathetic and imaginative understanding of the problems and give their encouragement and support, people will respond to the challenge, and together they will evolve a lively, stable and progressive community.

PHYSICAL PLANNING FOR THE DEVELOPMENT OF NEW TOWNS*

BOLESŁAW MALISZ

This paper discusses the physical planning of new towns with special reference to the East European countries, that is, those with a socialist planned system. Obviously all these countries have much in common, yet there are also considerable differences between them, due to their geographical environment, historic development and traditions as well as their characteristic demographic, social and economic features. Hence it is not an easy task to adequately depict the new-town idea and its practical implementation in all countries concerned. This requires a thorough knowledge of the specific circumstances in each of them.

DEFINING THE TERMS

New towns could be divided into two groups: a new satellite town is built to deconcentrate an existing large town. By building a system of satellite towns around a mother town, we can reshape its spatial structure. We thus get deconcentrated development in the form of a composed structure.

Conversely, when building other new towns, we consciously aim at creating a new centre of activity within an underdeveloped region. This is mostly effected by industrialization and is due to a regional decentralization policy. In other words, when developing an underdeveloped territory, new towns are being built according to the location of industry. Yet one should not exclude a non-industrial base for the construction of a new settlement. One should mention, above all, the new agricultural centres developed in the Soviet Union. Also in Hungary this possibility is not being excluded from the framework of the transformation of agricultural production. Another type of new town is the health resort or recreation centre built to promote tourism (as in Bulgaria).

A satellite town in itself is not a homogenous phenomenon. According to the views prevailing in the Soviet Union,¹ satellite towns can be divided by employment facilities into three groups, (a) those with most working places in the mother city; (b) those with working places employing 50-60 per cent of the working population; (c) those employing nearly the whole working population (85-90 per cent).

* Background Paper No. 9 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August to 7 September 1964.

¹ See A. A. Afontchenko, "About the rection and development of satellite towns round about large cities", in *News from Scientific Departments Building and Architecture*, 1962, No. 2.

The percentage of the working population employed on the spot varies as a rule according to the distance from the mother city. The first type corresponds to a 15-20 km. radius, the second to a 50 km. and the third to a 70 km. range. Only the third type of satellite town is considered the advisable one. According to the present means of communication, the distance of 100 km. is treated in the Soviet Union as a limit for satellite settlements. Towns at this distance and farther are considered independent cities. The maximum radius for satellites considered to be proper in Czechoslovakia is only 25 km. Smaller and more dependent units (of 4,000-10,000 inhabitants) can even be placed within a 10 km. range.

The concept proposed here could be considered acceptable but for one thing: the term new town. Originally this term denoted a new settlement in the shape of a town newly erected in a comparatively short period. This sharp differentiation, however, is difficult to maintain when confronted with the increase of the population three-, five- or more than ten-fold, which alter the current town-creating factors and radically reshape the spatial structure of an existing small town. It seems odd to call such a scale of development a mere town-extension. It seems more reasonable to consider the new-town phenomenon as a specific instance in the process of town extension. In this sense, it would be advisable to adopt the differentiation proposed by V. G. Davidovitch.² This Russian economo-geographer divides all the possible cases into the following categories:

- (1) New towns erected on undeveloped land;
- (2) New towns erected in connexion with old settlements;
- (3) Large-scale extension of existing towns;
- (4) Existing towns extended not more than five times;
- (5) Existing towns with a stable or decreasing population.

When analysing the problems of new towns we are mostly interested in the question: whether new towns have proved to be instrumental in controlling the urbanization processes. And, more: whether satellite towns are the correct and only means of decentralizing and checking the growth of large cities.

² V. G. Davidovitch, "Distribution of settlements in industrial regions", Moscow, 1960.

Under the socialist system, general socio-economic development is the subject of national economic planning. Physical planning is an integral part of the planning process. This seems obvious because each economic decision takes a concrete shape in the geographical environment. On the other hand, each decision concerning special relations has some bearing on economic and social matters. However, initially this simple truth was not recognised. Especially physical planning was not treated as a necessary component of economic planning on all three levels: national, regional and local. A demarcation line was drawn between economic planning on higher levels and town and country planning at the local level. This does not mean that the physical aspect was abandoned on the regional level. In many cases regional planning schemes were part of the technical work done by specialized investment bodies.

It is due to the long evolution of the methods of both economic and physical planning that their positions were established. The latest developments towards long-range (or perspective) planning of the national economy, and the need for co-ordination have strongly supported physical planning. This evolved differently in each of the countries of Eastern Europe, of course. Even now there are marked differences of the position and organization of physical planning in these countries. It seems worthwhile to discuss the evolution in Poland. Physical planning has had a comparatively long tradition in this country. Even in the pre-war period, town planning was carried on and in connexion with regional planning. However, under those conditions the achievements in regional planning consisted of developing methods rather than improving the pattern of land use.

In the years following the war the hierarchy of physical planning offices was created through the Physical Planning Act of 1946: the Central Office for the National Plan, regional offices in all the *voivodships* (provinces) and local offices in larger cities. But remarkable as it was, this physical planning system had no links with the then young organization of economic planning. There were significant differences in the approach on both sides. Whereas economic planning tried to cope with the economic difficulties of the post-war by short-term plans, physical planning was mostly concerned with the image of the distant future. Whereas physical planning, thanks to the trained pre-war staff, was widely spread all over the country, economic planning was highly centralized.

No wonder the farsighted perspectives of the physical plans have been subject to criticism from economic quarters. The year 1949 saw the formation of the State Commission for Economic Planning. The whole domain of physical planning was divided into two parts. Regional planning was identified with the so-called territorial section³ of the national plan. Regional planning schemes

were prepared only in rather exceptional cases, when the normal co-ordination of investment plans was not sufficient (e.g., the Upper Silesian Industrial District).

On the other hand, town and country (rural) planning, considered purely technical, was put under the responsibility of the Ministry of Building. Thus a gap was created between the regional-economic planning and the local-technical one. This gap had to be bridged by the directives of the economic planning authorities. Unfortunately, the authorities were not prepared to give such directives because they lacked a spatial aspect in their five-year economic plans. Strictly speaking they considered only the territorial section of the national plan. The real tool, the regional plan, was prepared only in specific cases.

It was only in the third period, beginning with 1957, that a starting point for the practical application of physical planning was reached. This was mostly due to the conception of long-term economic planning (now extending twenty years) of the whole national economy. Such a prolongation of economic planning periods automatically helped to eliminate the original divergences between the two kinds of planning. At the same time the territorial aspect of the national plan was strongly supported. It proved necessary to think of a comprehensive development of particular regions.

According to the Physical Planning Act of 1961, physical planning is considered an essential component of the national economic plan. The demarcation line between regional and local planning is still valid, however. The long-term physical planning studies and schemes are to be prepared on the national and regional level. The work is done by the regional offices which are part of the economic planning authorities on the *voivodship* level. The physical plan, covering the whole country, constitutes the spatial reflection of the national long-term plan. The regional plans are balanced against the perspective plans for the various branches of the national economy.

Local planning is under the responsibility of a special control body, the Committee for Building, Local Planning and Architecture. Activity in this field is notably decentralized. There are town and country planning offices on the *voivodship* as well as on the district level. All of them operate in close contact with the economic planning authorities.

As already indicated, this description does not reflect the exact situation in all east European countries. For instance, in many countries regional planning is centralized and conducted by town and regional planning institutes in the capital. Also, regional planning in some countries is still considered pure physical planning and carried on together with local planning under the responsibility of the Ministry of Building (as in Hungary). Nevertheless, there are generally close parallels between the case of Poland and that of other countries with a socialist planned economy.

³ By this term we understand the horizontal section within which the investments of various branches of the national economy are

co-ordinated within the boundaries of a region, usually within a province.

NEW TOWN PROBLEM

The new town problem is to be considered on the national scale in connexion with the drive toward a harmonious distribution of the economic activity within the country. Experience shows that human activity tends towards concentration. This concentric force is supported by visible economic profits. Yet this is not the only reason for concentration. The greater the agglomeration, the freer the choice it gives to the inhabitants. Both of these reasons—the economic and social one—are due to the fact that the mechanism of an agglomeration resembles the feedback phenomenon. The greater the agglomeration, the more attractive it is to the new-comers. But the masses of new-comers add to the attractive force by which more people are driven inside. Thus it happens that people and all sorts of institutions, when given free choice, accumulate and form immense agglomerations and conurbations. This process is automatically responsible for an uneven distribution of human activity and for the large so-called under-developed areas. We can find them throughout the world as well as in particular countries.

So, two sides or two aspects of the concentration phenomenon can be discerned. The first is the problem of under-developed areas.

In each of the east European countries there are considerable disproportions in territorial development due to their history. This was nowhere as striking as in the immense territory of old Russia at the time of the October Revolution. To develop meant to make use of the potential forces of the whole country. That is why the Soviet Union, to meet the needs of its increasing population, had to lay stress on the principle of a proportional development of the whole territory. During the long period since the Revolution, immense non-European territories have been developed to a considerable degree. Thanks to the continued geological research, tremendous deposits of natural resources have been discovered, giving birth to large industrial districts. Yet the network of settlements was very loose. New towns had to be erected.

This immense urbanization process was accommodated in three ways: by erecting new towns, by expanding existing ones and by introducing urban forms into rural areas. Among those the first way has been the most considerable. In the year 1959 there were 1672 towns in the whole country of which 670 towns were erected after 1926.⁴ In other words twenty towns have been erected every year over this long period. Two-fifths of the total number of towns have been built since the Revolution.

There arises, of course, the question: how many of those new towns have been erected on undeveloped land and how many in connexion with an old settlement? In the period 1926-1939, 5.8 million out of the 29.6 million increase in urban population, nearly one-fifth of this increase, fell to the large scale extension of old settlements. According to V. G. Davidovitch,⁵ the first of

these groups (that is, the completely new towns) constituted one-third of all towns in the Soviet Far East, one-fourth in the Ural, North Caucasus, Central Asia, West Siberia, Angaro-Yenisey, and the two northern regions. The second group (new towns on the place of old settlements) includes nearly one-half of all towns in regions of Donbas and Prydnyeprovye, one-third of towns of West Siberia, Transcaucasian and the far Baikal region, and one-fourth of all towns in Dolneye Povolshye and the Soviet Far East.

It is understandable that this scale of economic and urban development was stimulating to other socialist countries. True, the urban network in those countries is comparatively more even but there are still some parts of their territories to be developed. These industrialization processes, however, are not connected with the new town phenomenon to a degree which could be compared with that in the Soviet Union. In most cases it is always possible to find an existing town, be it even a small one, which can be extended.

In Poland, for example, the policy pursued in locating new industries has resulted in a change in the share of the respective *voivodships* in industrial employment. These changes are illustrated in the following table.

Industrial employment by *voivodship*

Voivodship	Share in industrial employment (percentage)	
	1946	1959
Białystok	0.5	1.3
Olsztyn	0.5	1.3
Koszalin	0.7	1.0
Szczecin	0.8	2.0
Lublin	1.5	2.7
Zielona Góra	1.5	2.3
Rzeszów	2.3	3.3
Opole	2.5	3.9
Gdańsk	3.1	4.9
Kielce	3.7	3.6
Bydgoszcz	4.5	5.5
Warsaw (including city of Warsaw) . . .	5.0	9.4
Cracow	6.3	8.8
Poznań	6.4	7.2
Wrocław	12.0	9.7
Łódź (including city of Łódź)	14.6	11.8
Katowice	34.1	21.3

SOURCE: *Atlas*, published by the Central Office of Statistics.

Within the same period, the absolute figures of industrial employment rose from 1.244 million (in 1946) to 3.166 million in 1961.⁶ Despite the notable increase in absolute figures, the share of the three most industrialized *voivodships* dropped from 60.7 per cent to 45.8 per cent, compensated by the higher share of all other *voivodships*. Evidently, industrialization is not the only "town-creating" factor. Research work done in the field of urbanization shows the increasingly greater role of the so-called

⁴ This increase does not include towns in the territories which became part of the Soviet Union in the period 1939-1945.

⁵ "Rassielenie w promyslnykh uzlach", Moskva, 1960 (p. 51).

⁶ *Statistical Yearbook 1962* (United Nations publication, Sales No.: 63.XVII.1).

tertiary sector. However, even when this is true, it is industrialization which in most instances helps to initiate the process of urbanization. That is why in underdeveloped parts of a country the location of new industry is so often the primary concern. It is obvious, that with the lapse of time, the network of various services is to be expanded. Some of those service activities become an increasingly more important town-creating (or extending) factor.

In Poland, industrialization as well as improved standards of services have both promoted urbanization. While the urban population increased from 7.5 million in 1946 to 14.6 million in 1961, the whole population rose from 23.9 million to 30.1 million.

The number of towns⁷ increased from 695 in 1946 to 893 in 1960. These figures include about 150 urban settlements. During this time forty-nine new towns were built. Yet this does not necessarily mean that all those towns were new in the strict sense of the word. Even then, there still remains a considerable number of newly constructed towns. But because of the relatively dense network of settlements in Poland, hardly any of those towns was founded on a completely undeveloped land. Such new towns have been created mainly in newly built industrial districts such as the copper industrial district of Lublin, in brown-coal districts Turoszów, Konin and recently Bełchatów, as well as in the new sulphur basin near Tarnobrzeg. The most widely-known Polish new town, Nowa Huta, built for the Lenin Iron and Steel Works, is the consequence of decentralization of Upper Silesia. Despite its more than 120,000 inhabitants, this new town is now a new district of the ancient town of Cracow.

Urbanization reveals the same tendency as the distribution of industry. In the period 1950-1960 the towns of the central *voivodships* (Łódź, Katowice, Poznań, Bydgoszcz, Opole and Warsaw) were characterized by slower (below the average) growth than those of other *voivodships*, which showed increases from 40 per cent up to 70 per cent.⁸ However it should be added that the principle of a "more even distribution" of industry and urbanization can be (and is now) criticized from the economic point of view. It is true, of course, that new mineral resources, when found, should be utilized. Yet this does not mean that a more even distribution of industry is always desirable. There are many times when expansion of the existing industry is more efficient. On the other hand not all parts of a country need to be developed. This is especially the case for regions which should be preserved for their natural beauty and other social values. That is why the principle of equalizing the standard of living for the population is becoming more and more the main principle of the economic development policy.

⁷ By the term "town" we understand in Poland an urban settlement which has been granted municipal status. This term is not connected with the size; for instance, among those 893 towns, 419 have less than 5,000 inhabitants, and 651 have less than 10,000 inhabitants.

⁸ K. Dziewoński, "The processes of urbanisation in People's Poland" (Warsaw, Information Centre of the Committee for Building, Town Planning and Architecture, 1962) (in English).

Similar trends may be observed in the urbanization policy of all east European countries. In Bulgaria, three new towns (Dimitrograd, Madan and Roudozem) are being built in connexion with new mining and industrial districts. The Town Planning Institute in Sofia is of the opinion that completely new towns are to be built but seldom because it is always possible to find an existing settlement which can be expanded. Another type of new settlement in Bulgaria is that built for tourism on the Black Sea coast. These settlements, however, are not considered to be new towns. They are rather resorts of a seasonal character (such as the Golden Sands near Varna, and the other localities near Nessebre).

In Hungary the increase in population is tending to diminish. Within the period 1949-1961 the population increased by 770,000 persons (8.4 per cent). The share of urban population within the number was 600,000 persons. The rate of urbanization, measured by the percentage of urban population, was 36.5 per cent in 1949 and 40 per cent in 1960. Under those conditions construction of completely new towns is rather a rare phenomenon.

The best known new town in Hungary is Dunanjaros, attached to the steel works. In addition, some new towns are being built in the coal mining districts (e.g., Komlo, Varpalotel, Orszbany, Aska and Nagybetony) and close to the chemical industry plants (e.g., Kazimebarcika, Tiszapalconya and Szaszhalombatta). Nearly all these new towns have been built in existing industrial regions, which give them the character of satellite towns, built for deconcentration purposes.

The second aspect of the concentration phenomenon is the decongestion of large urban agglomerations. It is obvious that this problem and the problem of underdeveloped areas form a sort of connected vessel. Yet there are two ways to decongest: decentralization, or the shifting of economic activity (above all industry) towards the insufficiently developed areas, and deconcentration. It is the latter that is closely connected with satellite towns.

The economic policy in east European countries so far has been mostly concerned with the problem of decentralization. New territories have been developed (mainly through the location of industry) and, at the same time, stress has been laid on the control of the growth of large urban agglomerations. This policy was, of course, accompanied by building new towns of a satellite character, especially in the old and congested industrial districts. But only in recent years has decentralization taken the form of new satellite towns in the strict meaning of this term.

The first steps in this direction have been made recently in the Soviet Union. But as A. A. Afontchenko rightly states,⁹ the satellite town phenomenon is by no means a novel one in the history of town building. Construction of new settlements, functionally connected with the "mother" town can be considered a general law in each epoch. This kind of urban expansion is particularly characteristic of the slavonic countries. Experts in urban

⁹ A. A. Afontchenko, op. cit.

history, both in the Soviet Union and in Poland, are even using a special notion of group-like or grape-like town formation in Eastern Europe during the Middle Ages.¹⁰ In contemporary town planning in the Soviet Union, the problem of satellite towns arose in connexion with the growth of large agglomerations. True, more than 200 completely new towns have been erected in that country; yet, taken together, this group comprise no more than 3 million people, exactly the increase of Moscow (without the agglomeration) in the period between 1920 and 1956. And Leningrad, Kiyev, Baku, Kharkov, Gorkiy and Tashkent each had a growth exceeding half a million inhabitants.¹¹

It is not only the growth of big cities as such, however, that generates new town planning problems. Whereas Moscow grew 2.5 times in the period 1926-1959, the Moscow metropolitan area, if it may be called that, increased four times. In 1959 the whole agglomeration had a population of 9 million of which 4 million lived in the suburban area. This population was scattered over thirty-two towns of over 30,000 inhabitants, forty urban settlements and forty suburban recreation localities. In other large agglomerations the figures are relatively smaller, but none the less the same problems exist and call for new solutions. Attempts to find a solution resulted in the conscious construction of new satellite towns.

In other east European countries the problem of new satellite systems has not been tackled so far, the only exception being Poland. In this country, the Warsaw agglomeration is nearing 1.5 million, while the number of inhabitants in the conurbation of Upper Silesia exceeds 2 million. There are also five other cities with a population of some 500,000 each. In Upper Silesia, the regional scheme provides for new satellite towns, and some of them are already under construction. Other large cities are nearly prepared to face this problem.

Building new satellite towns is one solution. However, it is still to be seen whether this solution is sufficiently effective. One should not overlook the possibility of a radical extension of towns which are situated at such a distance from the deconcentrated agglomeration that it is possible for them to form a separate urban agglomeration. Also the possibilities of extending the large urban agglomeration should not be under-estimated. It is true that to date the existing agglomerations have not been a success. Nonetheless, this does not mean that it is impossible to improve the spatial pattern of such an agglomeration.

NEW TOWNS IN REGIONAL PLANNING SCHEMES

Under the planned economy system, physical planning is carried on through the national plan and presents the spatial results of economic planning, the regional and local plans. The planning follows the principle of the so-called successive *rapprochement* to the solution. At first the general over-all data and directives are given on

the basis of the national plan. These are dealt with on the regional level. Finally, changes in the national plan are introduced according to regional studies.

It is to be added that there are two kinds of regional planning schemes. One is the plan for the whole region, that is, the *voivodships* or provinces. The other is regional planning for the particular areas of the *voivodships*, and constitutes an intermediary link between regional and urban planning. Consequently, in another successive *rapprochement*, the regional planning scheme gives the sum of the directives for the local planning schemes and is subject to corrections based on the local analysis. So, as somebody said, a dialogue between planners of various levels is continually taking place.

The spatial solution of the regional plan has to be in accord with the economic possibilities determined in the national plan. Thus the concept of this solution results from the regional survey on the one hand, and from deductive thinking on the other. The specific method of the physical approach is considered to consist of a graphic (or rather cartographic) representation of various components. Maps are superimposed upon each other to find and promote correlations.

Obviously, this procedure sometimes leads to varied solutions. This has resulted in an increasingly wider application of the method of preparing precisely defined alternatives. From among the possible solutions the optimum one should be selected. Hence, mathematical methods are more and more widely used. The general form of this mathematical approach is the so-called economic calculation. It consists in finding the optimum effectiveness, that is, the optimum relation between the input and effect. Under the usual procedure, the index of effectiveness of various possible solutions is estimated to provide an exact comparison as a foundation for the best choice.

Much stress is being laid on a comprehensive estimation of the costs of investment and the effects to be obtained. Unfortunately, the present technique does not account for all the social costs of investments. This is due, of course, to the theoretical difficulty of estimating all the results of a given investment proposal. Thus, two different calculations are required: one is to be made from the viewpoint of the investor (the industry concerned) and the second from that of all the consequences the given location of an industry is liable to have on the whole regional economy.

The economic calculation of solutions is not only a matter of mathematical techniques. The input-output technique is also being introduced as well as various simulating models. Here regional planning in Poland is supported by the research work of the Polish Academy of Sciences and its Department of Mathematics. Computers have been experimentally introduced in the optimization procedure. For regional planning, this procedure is applied to the optimum distribution of various elements of the plan.

It is against this background that the conceptual approach to the new town problem in regional planning

¹⁰ See, e.g., K. Dziworski, "Changes in Polish urban settlements", Warsaw, 1949.

¹¹ V. G. Davidovitch, op. cit.

schemes should be considered. According to the systems proposed in the first section, we should focus our attention on two specific cases. The first is the new town problem in the regional scheme for newly developed areas and the other is the problem of deconcentration by means of satellite towns.

There are many ways of developing an under-developed area, but among them industrialization is most instrumental, especially for initiating that process. However, this is easier to be effected when natural and, above all, mineral resources are available. Then, the assumptions for extractive industries may be established. The next step is the preparation of a programme for developing a group of industries dependent upon the resources.

This procedure would not differ substantially for the location of an industry which is not bound to local raw materials. The figures of the assumed employment in industry can be estimated, and compared with the regional labour market. It is important to calculate the number of employees for whom new housing must be provided. On this basis the assumed rate of urbanization within the region is established.

Under European conditions, existing urban settlements are sufficiently dense to permit extension of particular existing towns. Town extension can be sometimes so great that the existing town constitutes only an insignificant part of the whole development. Seldom is a completely new site required for a new town.

Within the regional scheme all of the important conditions for urban development have to be studied in great detail. These include, of course, the soil, water supply and sewage disposal as well as possible extensions of the infrastructure. Service facilities are also among the most important premises for the spatial solution. The location of service centres and recreation facilities must be considered.

This simplified description of the regional planning methods shows that the spatial or physical solution is a highly intricate problem which can be solved only on the basis of comprehensive studies made with the help of representatives of various disciplines and in collaboration with many agencies. But one should simultaneously add that all the means at the regional planner's disposal are not sufficient in this work. Many of the problems involved must be studied more closely on the local level, and regional schemes largely depends on urban planning. In our experience, even the location of a large plant can sometimes be questioned on the results of studying the local conditions.

The role of the satellite towns in the case of deconcentration will be shown in two examples. The first is the problem of deconcentration of congested industrial conurbations.

The regional plan for the Upper Silesian Industrial District in Poland is characteristic of the case. The first concept of this plan was evolved in the years 1949-1952. This conurbation, based on the coal, iron and steel industry, consists of some twenty towns which are grow-

ing together. The population of all these towns is 1.7 million. The spontaneous growth of this conurbation in the preceding period and the intermingling with industrial and mining land resulted in serious conditions for the population as well as for further industrial development. The main idea of the regional plan consisted in deconcentration. Around the conurbation nearly ten satellite towns have been proposed. The capacity (about 300,000 inhabitants) of these towns had to provide for the necessary increase in population, whereas the extension of the existing towns has been radically limited. Sites for the new towns were chosen on the basis of careful local studies. Several of these new towns are under construction. The best known of them is Nowe Tychy which in 1964 had 60,000 inhabitants against the planned figure of 120,000.

Experience acquired in implementation pointed to some phenomena not assumed in the preliminary concept. First, the difficulties in getting sufficient labour for the coal industry resulted in the particular coal mines bringing employees as near the working place as possible. Secondly, delays in executing the railway-electrification caused difficulties in persuading the people to settle in the new towns. And, last, the expiration of many coal mines allowed land to be reclaimed for urban purposes. At the same time new coking coal was found in a neighbouring region which had to be developed.

All these conditions required changes in the initial scheme. The latest proposals of the regional plan are based on the principle of integration. Stress is now being laid on redevelopment of the whole area of the conurbation. Building new satellite towns has been slowed down, as it is possible to bring new inhabitants within the central part of the conurbation. A clearer delimitation of industrial land is being proposed, and a hierarchy of service centres of different levels is being introduced. Obviously this will demand changes in administrative boundaries and organization.

This example seems to imply that the frequently advised deconcentration principle must always be carefully studied and that there is not one rule only. One should add that the Upper Silesia deconcentration scheme was accompanied by other administrative measures, such as control of new industrial locations, decentralization of industry by developing the neighbouring regions of Cracow, Czestochowa and Opole and in the form of shifting industry to the central and eastern parts of the country. The share of the proposed population of all new towns was rather small as compared with the proposed population of the total. Even so, the original scheme had to be changed. Developing new towns always requires expensive infrastructure. But there are also social and psychological reasons against this solution, such as a long journey to work and lack of many urban amenities. That is why the spatial solution should always be the result of a comprehensive study. But it is also our experience that a regional scheme should never be considered a stable or static one. Flexibility is one of the most positive features of such a scheme. One has always to consider that the prevailing conditions change. Thus

the concept of a regional scheme should always leave room for future solutions.

A typical deconcentration problem is the example of the Moscow region.¹²

Moscow, as indicated, contains 9 million people. Four million are in the suburban zone. The tremendous growth of this agglomeration in the last decade is considered to cause many negative phenomena, well known in other world metropolises. That is why even in the nineteen-twenties some administrative measures were introduced to check the spontaneous increase in population. As these proved to be insufficient, further limitations were proposed in 1931. In Moscow (and later in all cities over 500,000) the location of new industry and other town-creative factors have been prohibited.

In 1956 the Congress of the Party recommended further steps towards deconcentration. While the initial measures had a negative character, the new policy was based on positive measures. The possibility of shifting existing industry was studied and a large-scale programme of building satellite towns has been proposed. The new regional scheme for the whole metropolitan area provides for some twenty new satellite towns with a total of 1 million inhabitants. Many town planning institutes and designing offices are preparing town plans. Some are now under construction, Kriukov being the most advanced example.

A similar regional scheme has also been prepared for the Leningrad metropolitan area and other large cities. In Soviet literature¹³ the following recommendations for satellite town schemes are to be found:

(1) A large city and its metropolitan area (suburban zone) constitute an integral socio-economic entity and should be considered an administrative unit;

(2) The planning task should be solved by collaboration of the regional and urban planning authorities;

(3) The economic premises for building a satellite town should be prepared through regional planning, the basis being a rational distribution of working places;

(4) Each satellite town should be developed on the basis of its town-creative factors. Priority should be given to the industries shifted from the mother town;

(5) In some cases the town-creative factors are the scientific institutions (as in the case of Dubna near Moscow—a centre for nuclear research);

(6) Around the central city a wide green belt should be laid;

(7) The most advisable distance between mother and satellite towns is considered to be 50 to 70 km.;

(8) In exceptional cases other types of satellites can be built—these being rather detached residential districts (up to 20 km. distance);

(9) The optimum size of a satellite town is considered

to be 50,000-80,000 inhabitants, the minimum being 20,000-25,000 and maximum being 100,000 inhabitants;

(10) When looking for a site, the situation along electrified railways is preferable. Too much dispersal should be avoided;

(11) When staging development, the infrastructure should be first provided;

(12) Building of new satellite towns should be accompanied by redeveloping the central districts of the mother city.

The rules indicated above may cause some argument, especially the optimum distance from the mother city and the optimum size of a satellite town. The distance which can be covered by commuters is the function of technical progress in communication. And there is also hardly a town size which could be considered as an absolute value. Also one could object to the tendency of expounding such strict rules. The rules have been quoted only to indicate the directions of thought under the present conditions. It is clear that they will have to be changed with changing conditions. Much stress is given in Soviet town-planning literature on the statement that appropriate studies should furnish the basis for the chosen solution in each specific case.

URBAN PLANNING FOR NEW TOWNS

When dealing with the methodology of urban planning, we need not differentiate new towns into satellite towns and other types. The methods of urban planning hardly need vary. But the other division into completely new towns and into extended towns is still valid.

To characterize the urban planning methods and techniques in relation to the new town problem, it would be useful to begin with the division of various forms of town-planning schemes. Here the Polish practice will be illustrated, the differences of other east European countries being of less importance for the subject concerned.

According to the Polish Physical Planning Act of 1961, we distinguish (a) the general plan (master plan) prepared in the scale 1:5,000 and 1:10,000; and (b) the detailed plan, prepared in the scale 1:1,000 or 1:2,000.

The master plan, by delimiting the land-use zones, constitutes a basis for urban development policy. In cases when the neighbouring towns are near each other and functionally connected, the master plan is to be prepared for the whole set of towns. This form of urban planning hardly differs from the detailed regional plan and is often prepared instead of it.

The detailed plan for the particular town areas constitutes the basis for all the so-called spatial decisions within its boundaries, its aim being the co-ordination of various investment programmes.

All urban plans are prepared by the local physical planning authorities. Yet implementation of concrete investment programmes demands another kind of plan. These are the realization designs prepared by different

¹² A. A. Afontchenko, op. cit.

¹³ See K. F. Knyaziev, "Satellite towns and the development of large cities" published in *Izvestija Akademii Stroitelstva i Arhitektury*, Soviet Union, 1960, No. 2.

designing offices working for various branches of the national administration.

New towns are worked out in all those forms successively. The town-planning work often begins in the form of a competition (for the concept of the master plan). In some cases the whole planning and designing work is done by a special agency created for this purpose and for all the urban investment programmes except industry.

Even more important for the urban planning methods is the period of planning. The evolution of physical planning aiming at integration with the planned economy eventually resulted in the preparation of three kinds of master plans, as far as time is concerned. These are:

(1) The stage plan, prepared for the period of the coming five-year national economic plan;

(2) The long-term plan co-ordinated with the period of the long-term plan of the national economy (approximately twenty years);

(3) Long-range studies, carried on for the distant future to analyse the possibilities of further town extension.

The long-term plan—in traditional town-planning methods—was the only representation of the future town, conventionally defined as twenty-five to thirty years. But it is important to stress that each physical plan consists of two parts: the programme and the locational scheme. Evidently, there are difficulties in drawing up a programme for such an uncertain period. That is why in our planned economy the period of the long-term plan has been co-ordinated with the period for which the national plan is prepared. It is only for such a period that the needs of the population and the costs of execution can be balanced with the economic possibilities defined for the whole national economy.

The long-term urban plan remains even now the main directive for the development policy. None the less, experience has shown this form of planning to be insufficient for proper execution. The span of about twenty years between the existing state of affairs and the intended future development of a town is too long to provide successful means of co-ordination, all the more so as the long-term national plan has also to be adjusted according to the changing socio-economic conditions of life.

This was the reason why in the early fifties a new form, namely the stage plan, had to be introduced. Such a short-term plan can be constituted in greater detail according to the intended development of the various branches of the national economy. Such a plan, being consonant with the long-term master plan, helps to co-ordinate all the realization designs. At the same time, in

making such a stage plan, all the changed conditions can easily be stated which in turn help to correct the long-term plan. So town planning has become a continuous process going on in cycles of time.

The method of planning for five or twenty years, but always for definite periods, is relatively simple, even when practical difficulties have to be overcome. One, but by no means the least, difficulty may be mentioned here. It consists in the time-table of planning. Obviously a master plan (for the next five-year period) has to be prepared on the assumptions taken from economic planning. These assumptions, however, are liable to change during the time which elapses between formulating and approving the national five-year plan. Therefore, in preparing a master plan for a given town (which is a time-consuming process) one always takes a risk of going astray. On the other hand, the results of local planning should influence the economic plans for the next period. A solution has been found in a double preparation of each stage planning scheme. At first the stage plan has a character of balanced demands of the town, and constitutes an argument for local authorities in the discussion with central planners. It is only when the national plan has been approved (also in its territorial divisions) that the final stage plan for a town can be prepared.

From the theoretical point of view more difficulties are connected with town-planning schemes which are prepared as long-range studies. This subject will not be considered here, inasmuch as it is dealt with in another paper.

Let us return to the question posed at the beginning. It seems to be evident, against the background of the reasoning presented above, that building new towns is by no means the only possible solution, both in deconcentration of large agglomerations and in developing new industry in under-developed areas. Of course, building new towns is necessary in newly developing areas, where the existing network of settlements is scarce. But in most cases the problem is not whether we should build a new town or not, but rather how to provide a functional system of settlements by extending existing ones in a measure appropriate with the economic activity of the region. Thus we are not bound to use one measure only to get the proper result. Quite the contrary, the physical planner in union with the economic planner may utilize a whole set of means to guide the urbanization policy. The choice of the right instrument depends on many assumptions and conditions which should always be the subject of thorough study. When analysing the possible spatial solutions, it is important that we not only find the conceptual forms, but also verify all solutions by a quantitative analysis. All applicable disciplines and all parts of the world have a contribution to make.

BUILDING NEW TOWNS*

N. V. BARANOV

The problem of building new towns is of great importance to many countries. It has assumed particular importance in the Soviet Union and other socialist countries, where many new, large-scale industrial enterprises, scientific and cultural centres, and large health resorts are under construction.

In the Soviet Union approximately 800 new towns and some 2,000 urban-type settlements have been established during Soviet rule. Most of the new towns are being built in Siberia, the Far East and Central Asia, though the need for them has not yet been fully met even in the European part of the USSR. Many new towns, begun in the nineteen-thirties, are now major industrial and cultural centres. For instance, by 1962 Zaporozhe had 480,000 inhabitants, Karaganda 459,000, Novokuznetsk 410,000 and Magnitogorsk 333,000. New towns will spring up on an even larger scale under the long-term plan for development of the national economy of the Soviet Union up to 1980.

PLANNING THE SIZE OF SETTLEMENTS

The rapid economic development of the USSR causes drastic changes in the distribution of population within the country. As a result of industrialization, the urban population is increasing rapidly. It accounted for 18 per cent of the total population in 1913, but had risen to 52 per cent by 1963. The urban population has increased by 89 million during the years of Soviet rule, and is now 115 million. It will continue to increase because of industrial development and mechanization of agriculture.

By rational distribution of the forces of production and judiciously regulated urbanization, the historic pattern of towns and villages will be gradually transformed into a rational system of urban localities. The main type of settlement will be the optimum-sized town. Larger towns will be properly planned and the smaller inhabited localities will be laid out in an interrelated pattern.

Experience has shown that large towns are in various ways inconvenient, as well as relatively unhealthy to live in. Building costs, too, are higher in large towns. Hence, to create better and healthier living conditions and to avoid high construction costs and the need for more complex urban services, steps are being taken in the Soviet Union to regulate the growth of large towns and

to develop new towns. The growth of new towns is kept within optimum limits.

In the opinion of Soviet town planners, the optimum-sized town is the one which costs least to build and which is so planned and erected to combine the advantages of both large and small settlements, while avoiding the characteristic shortcomings of old towns.

The optimum size will not, of course, be the same for all towns. It must be borne in mind that towns have to serve different productive, administrative and cultural purposes and must be suited to their natural setting, climate and other factors. The optimum size of a town is determined by the pattern of production, the way it is to be laid out, and feasibility of providing community services at a high standard, and the effective use of industrial building methods.

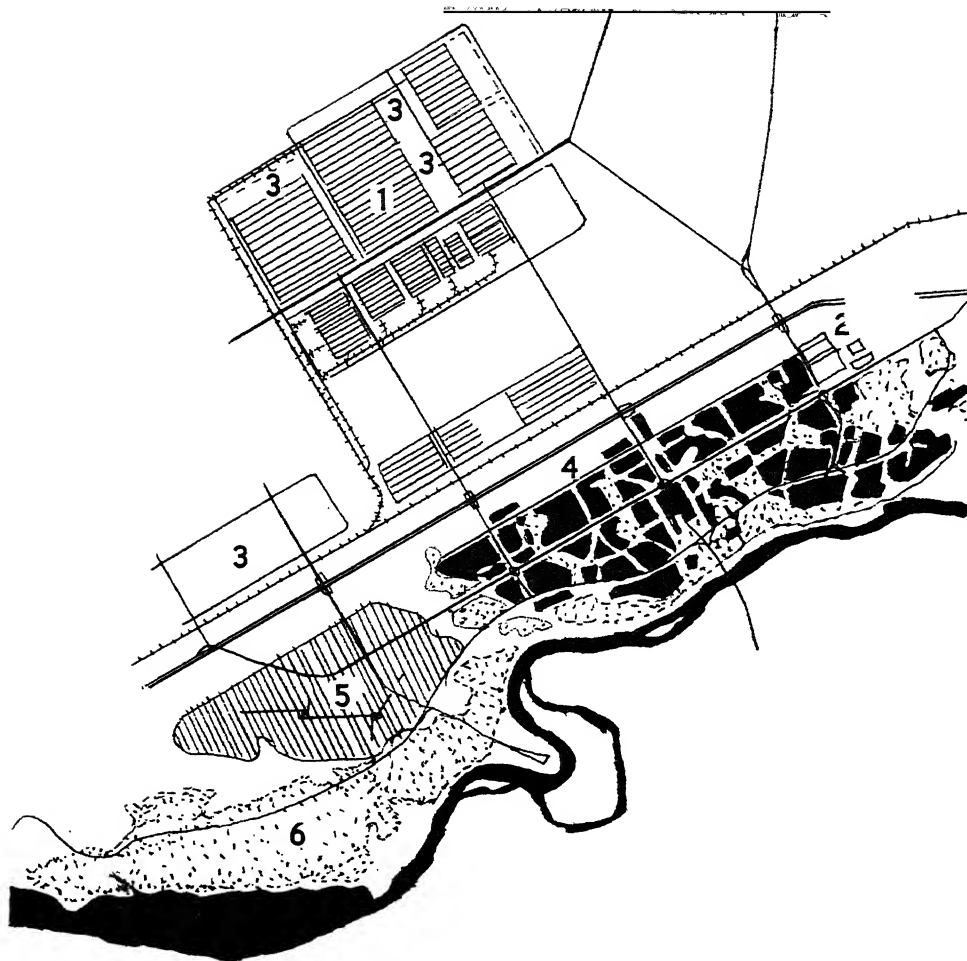
According to data assembled by Soviet town planners, the optimum size for a town varies in population between 150,000 and 250,000. The optimum size for a satellite town ranges from 50,000 to 100,000 inhabitants.

The growth of towns in the Soviet Union is kept within bounds and in step with the national plan by regulating the factors of urbanization. The main factors of urbanization are industry, power and transport, for it is on their development that the location and growth of towns mainly depend. The rational location of production and distribution of population—matters of the greatest importance to the economy—are determined on the basis of State planning and of the plans for specific industrial, agricultural and resort areas.

The great importance of regional planning has been demonstrated in various countries. In the Soviet Union regional planning provides the basis for the layout of vast industrial areas: the Donbas, the Kuzbas, the Estonian shale deposits, the Irkutsk-Cheremkhovo area, and the areas served by the Kuibyshev, Volgograd and other hydro-electric power stations. Regional planning is even more important in the vast new territories recently brought under cultivation.

According to the size and location of proven mineral deposits and the availability of power resources, the regional plans specify what industrial plants are to be installed, what is the most rational combination of productive industries, what transport and communications are needed between them, what is a sensible pattern of settlement and what should be the size of the new towns. Regional planning thus plays an important part in siting

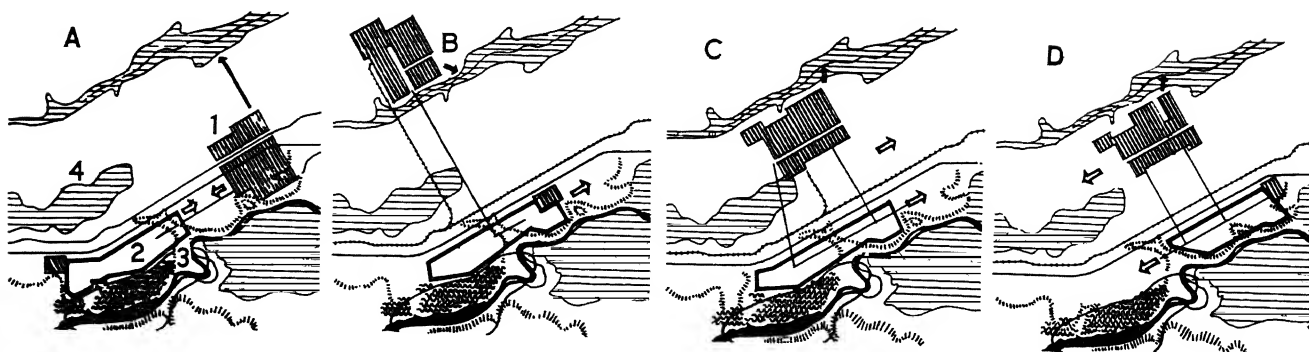
* Background Paper No. 11 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August to 7 September 1964.



Credit: Architecture of U.S.S.R., No. 7, 1966 (from "Planning of New Town" by V. Shkvarikov and I. Smolar)

New town in the Union of Soviet Socialist Republics

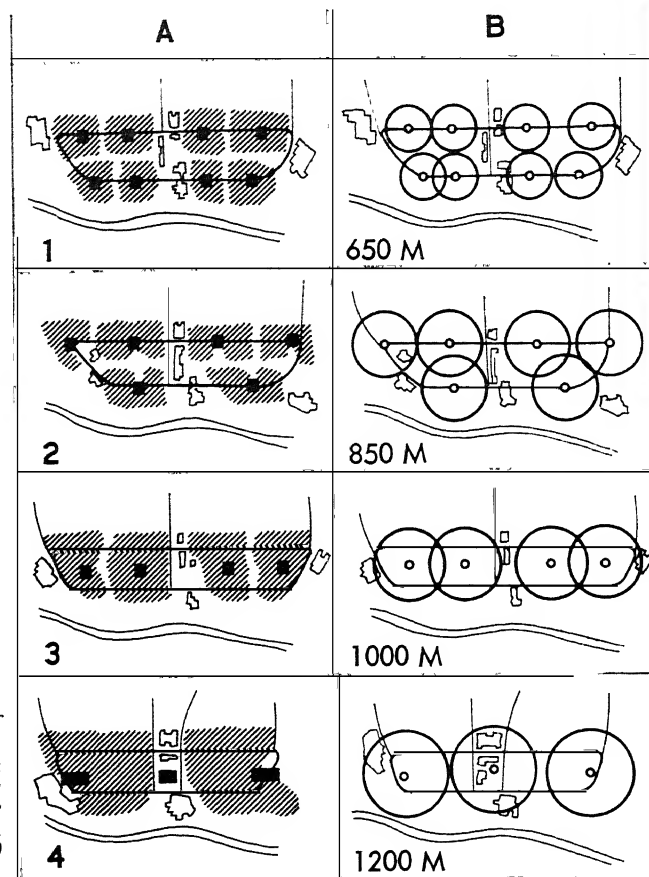
This new town study demonstrates some of the key variables of planning for a new town based, in this case, on oil and chemical enterprises (1) and their future expansion (3). Innocuous enterprises (2) are located near residential areas (4) and future residential expansion (5). Major advantage of the river was taken for recreation areas (6), with extensions of open space penetrating into the residential districts



Credit: Architecture of U.S.S.R., No. 7, 1966 (from "Planning of New Town" by V. Shkvarikov and I. Smolar)

New town in the Union of Soviet Socialist Republics

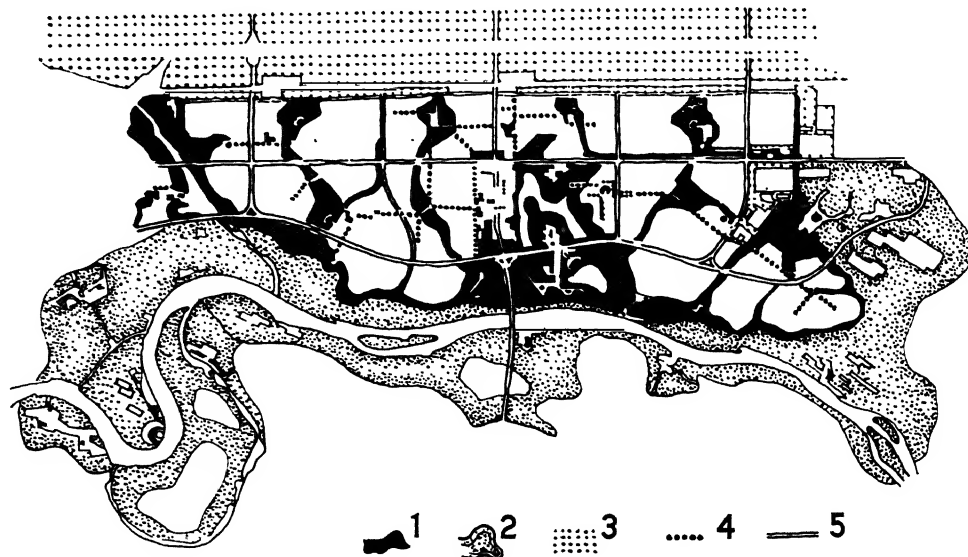
Alternatives considered. The basic alternatives of new town form centred largely upon the location of oil and chemical industries (1), with certain variations in the location of the residential areas (2), and a common location for recreation (3). Areas unsuitable for development (4) are indicated, as well as areas of possible expansion (arrows)



New town in the Union of Soviet Socialist Republics

Alternatives for residential districts and cultural facilities. The four diagrams in the left column (A) show the possible scale of residential districts and their centres. Population may vary from 20,000 people in each district at the top to as many as 65,000 in the district in the bottom panel. Neighbourhoods are within the districts in each case. The column on the right (B) indicates the variations of distance from the centre involved in each alternative. The second alternative with six districts, each with nearly 30,000 people, was selected as having the best advantages

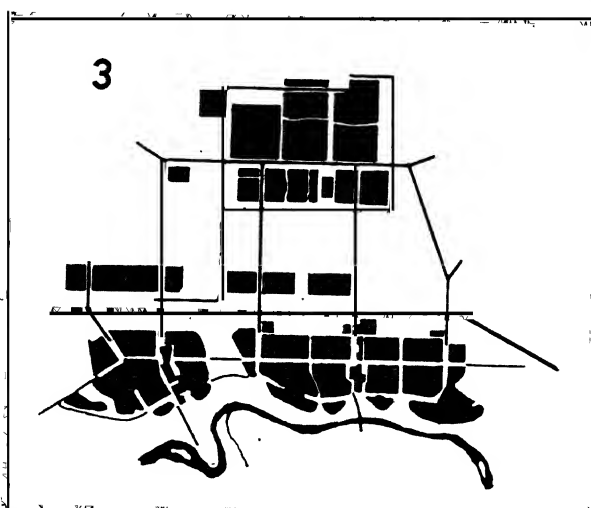
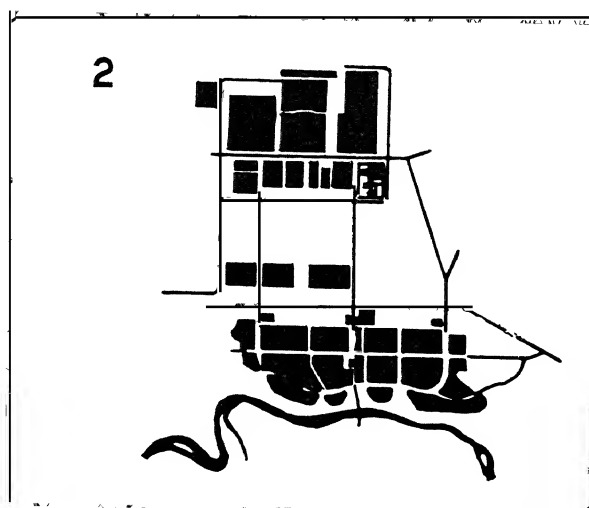
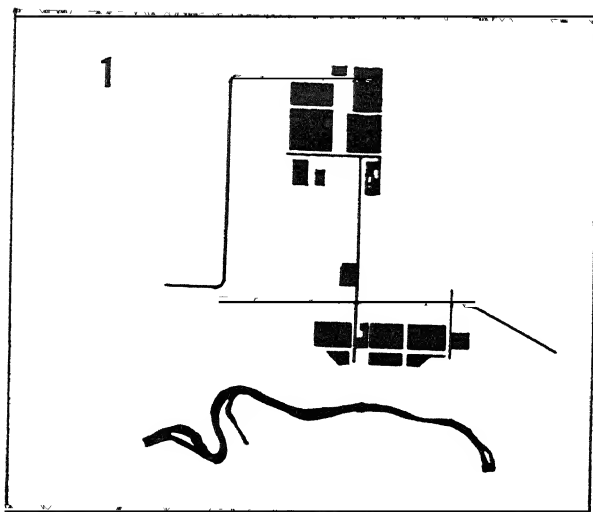
Credit: Architecture of U.S.S.R., No. 7, 1966 (from "Planning of New Town" by V. Shkvarikov and I. Smolar)



Credit: Architecture of U.S.S.R., No. 7, 1966 (from "Planning of New Town" by V. Shkvarikov and I. Smolar)

New town in the Union of Soviet Socialist Republics

Scheme of planning and open space. There is a liberal allowance for open space within the residential areas (1), the suburban recreation areas (2) and the planted buffer zone (3) separating the residential from heavy industries. Pedestrian ways (4) emphasize internal district movement while transport roads (5) stress inter-district movement and connexions with the industrial areas



Credit: Architecture of U.S.S.R., No. 7, 1966 (from "Planning of New Town" by V. Shkvarikov and I. Smolar)

New town in the Union of Soviet Socialist Republics

Stage development. The first stage (1), requiring 5-10 years, would serve a population of 90,000. The second or project stage (2), covering a total of approximately 25 years, would accommodate the planned total of 175,000 people. A third and contingent stage (3) provides for a possible 300,000 people

the new towns and in determining their main characteristics.

The basis of town planning is the master plan which specifies how many inhabitants it is to have when completed, how much land it is to occupy, the directions in which it will be allowed to grow, the functional zoning to be observed, the street plan, the location of community centres, parks and open spaces, and the like. The successful application of regional plans and master plans for new towns is assured by taking their main provisions into account in the long-term national economic plans.

BUILDING SATELLITE TOWNS

The building of satellite towns is a part of the development of the largest cities and can be used to keep their size—in population and area—under control.

After the Second World War the decentralization of large towns received a great deal of attention in a number of European countries, particularly the United Kingdom. Since the nineteen-thirties, satellite towns (Zhukovsky, Dubna, Sumgait, etc.) have also been built in the Soviet Union. In Soviet satellite towns, unlike the so-called dormitory towns, most of the inhabitants are employed at local enterprises or scientific institutions. This arrangement drastically reduces the time spent in travelling, the volume of passenger traffic and, consequently, the rolling stock and road transport facilities needed between town and suburbs.

Soviet and United Kingdom experience of town planning leads to the conclusion that the way to build a satellite town is to lay the foundation for a self-contained urban community by providing employment opportunities on the spot. This can be done by bringing in from the large towns enterprises in need of reconstruction and by building new industrial plants to serve the growing needs of the population.

In addition to industry, satellite towns provide suitable locations for scientific and teaching institutions, large hospitals and dispensaries, normally under better conditions than are available in the large towns. The truth of this contention is convincingly demonstrated by the Sestroretsk resort, near Leningrad, and the Siberian Centre of the Academy of Sciences.

Given the speed of modern suburban transport a satellite town can be sited forty to eighty kilometres from the parent city without denying its inhabitants access to city amenities such as theatres, museums and sports grounds.

The development of a satellite town will be a success only if the over-all cost of building it, per head of population, can be kept at or below the cost per head in the parent city. According to preliminary calculations, the cost of building a new satellite town near Moscow is approximately 2,100 roubles per head of population, which is below the *per capita* cost of constructing new districts of Moscow.

The construction of satellite towns affords a means of restricting the growth of the largest cities only where

limits are set to the development of the city's constituent features, such as utilities and transport, and where satellite-town construction is adequate in scale and pace.

There is a lesson to be learned from the building of London's satellite towns. With employment still heavily concentrated in the City, and with industrial plants turned over to new types of production after being vacated by enterprises moving to the satellite towns, the satellite towns have not been developed fast enough to produce the anticipated effect on the growth of the capital city. This means that the pull exerted by the satellite towns has proved insufficient, in relation to the size of Greater London, to restrict its growth. In the Soviet Union the intention is that satellite towns should have not less than one-fifth as many inhabitants as their parent city.

LAYOUT OF NEW TOWNS

The layout of new Soviet towns is determined mainly by social requirements, by the community of interests of the population as a whole, to improve working and living conditions and to expand educational and recreational facilities for all the inhabitants. For this reason, even at the stage of siting the future town, every effort is made to choose the best natural setting, with an eye to adequate intercommunication between industrial and residential districts and places for rest and recreation. Because the land and the means of production are not privately owned and because building is subject to state planning and regulation, towns can be planned to provide optimum conditions.

Most new towns are industrial centres and their layout is affected by the location and organization of the industrial sites. The fundamental principles for the siting of industrial enterprises are: (a) enterprises should be grouped together in industrial districts according to the nature of their output so that they can co-operate as closely as possible in the use of transport, civil engineering works, power and heat supply, and in the organization of building storage; (b) health requirements should be strictly observed, and industries which do not emit offensive substances should be sited as close as possible to the residential area.

By instituting co-operation among enterprises, pooling storage facilities, and laying out access roads, through roads and blocks of industrial buildings and installations according to a rational scheme, the space taken up by industrial districts can be kept down and the land and civil engineering works can be used efficiently.

The size and number of industrial districts and their location within a town depend on what they are to produce and on where the working people can best be housed. A small town will usually have only one industrial district. Larger towns have more than one, especially where industrial enterprises differ greatly in nuisance value, transport requirements and so on. Multiple industrial zoning eases the transport problem for the labour force and cuts down the distance between job and home.

Inasmuch as the proportion of enterprises with no nuisance value will increase as technology advances, it is becoming a matter of great practical importance to integrate industrial and residential urban districts and places of recreation. Integrated urban districts, bringing the people closer to their places of employment, in no way debars the people from forging durable and varied links with other parts of the town.

The organization of residential districts is governed by the need to provide the inhabitants with the best possible living conditions and recreation amenities. In socialist towns these requirements are the same for all districts since there is no segregation by wealth or race.

New town plans based on the division of all service installations into four classes: (a) institutions and enterprises used by the public every day (crèches, kindergartens, schools, sports grounds, provision shops, dining halls, etc.). These are sited as close to the dwellings as possible; (b) institutions and enterprises which provide services and amenities in intermittent use (cinemas, polyclinics, houses of culture, etc.). These are sited within walking distance at the centre of the residential district; (c) institutions and enterprises serving the whole town and located at its centre (administrative offices, theatres, museums, city shopping centres, etc.). These are usually reached by transport; (d) recreation facilities and installations for the urban population, situated in the suburbs.

The basic component of the residential area is the neighbourhood, comprising dwellings and facilities in daily use within easy walking distance (300-400 metres). A group of neighbourhoods, linked together by common institutions and facilities in intermittent use, make up a residential district.

While the social purpose of the neighbourhood and residential district is the same in all circumstances, they vary widely in size, layout and architectural character, reflecting the diversity in size and structure of the towns concerned, of natural settings, of locations within the town, of types of dwelling houses, etc. Subdivision of the residential area of a town into neighbourhoods, making all facilities as convenient as possible, helps to solve the problem of urban traffic. On the basis of a rational organization of services and easy walking access to them, the accepted population of a neighbourhood is usually between 6,000 and 12,000.

In residential districts, the service installations lie within walking distance of 1,000-1,200 metres. The population ranges from 25,000 to 45,000.

The neighbourhood, as the basic structural component, retains its significance and is organized on the same lines whatever the size of the town; the way a residential district takes shape is much more dependent on the town's size and layout. A town of up to 50,000 inhabitants may consist of a single residential district, with the installations of intermittent and occasional use concentrated at its centre. In towns of more than 50,000, the residential area is divided into several residential districts.

The general town centre is of no less importance in new towns than in the traditional towns, and normally occupies a commanding position. In socialist towns, this centre is the focus of political, social and economic activity, of theatrical, artistic and musical life, and the scene of public celebrations, demonstrations and fetes. In addition to the general town centre, specialized educational, medical or sports centres are sometimes set up as an accepted feature of services and amenities provided for the public.

In addition, the general system of centres within the town also includes the centres of industrial districts and of recreational areas. The network of centres thus embraces the whole town and its inner suburbs. The town centres and district centres must form a coherent architectural whole and impart unity to the town plan.

PRINCIPLES OF URBAN TRAFFIC AND TRANSPORT

The time factor is important in urban development and has a decisive influence on planning and construction. Accordingly, inhabitants should have no more than a thirty-minute journey to work, services, amenities or shopping centres, including the time it takes them to reach public transport stops.

Thoroughfares and streets must be laid out so that vehicular and pedestrian traffic can move quickly, conveniently and safely. To meet these conditions, the urban road network is composed of four types of roads: motorways for non-stop traffic, thoroughfares served by public transport, side streets, and footpaths. The main form of movement in Soviet towns is public transport, which in the future is to be free of charge.

This arrangement obviates the often insoluble problems of urban traffic that afflict many European and American towns, clogged as they are with hundreds of thousands, even millions, of private cars.

The size of the new town and the prospects of further growth determine the choice of the type or types of public transport. This choice is influenced not only by the number of inhabitants but also by the siting of residential localities relative to places of employment, the size and configuration of the urban area, the climate and other factors. In addition to a network of garages, temporary parking areas are provided for city transport especially near theatres, sports grounds, railway stations, factories and institutes.

PARKS, OPEN SPACES AND CIVIL ENGINEERING WORKS

The intelligent use of terrain has a great deal to do with the way a new town takes shape, especially the system of parks and open spaces and the recreation facilities. Every effort must be made to preserve existing greenery and use it effectively as part of the new town's system of parks and open spaces.

Many new towns, such as Magnitogorsk, Nibet-Dag, Rudny and Sumgait, have been or are being built in places which have no natural vegetation and which are

exposed to high winds, have an extremely cold or hot climate, and lie on salty soil. In such towns, local climatic conditions can be improved by a lavish system of parks and green spaces linked with ornamental waters and irrigation works.

In towns in the south which have a hot climate, the coolness from gardens, parks and green spaces between buildings, combined with the moisture from ponds and fountains, is sufficient to bring the oppressive temperature down by four or five degrees centigrade. Here the Central Asian Republics of the Soviet Union have valuable experience to offer. In the post-war years large artificial reservoirs have been built in a number of new towns in these Republics. At Dushanbe in Tadjikistan, for example, the planting of greenery and the building of artificial lakes and ponds have not only improved the town's climate but have also made it possible to provide aquatic sports and bathing beaches.

Sizable canals are being dug to serve the towns. One, some 500 kilometres long, will bring water for drinking and general use from the river Irtysh to many new towns in Kazakhstan.

Local climatic conditions in towns and the cleanliness of their air space and water catchment areas largely depend on the surrounding terrain. New towns are accordingly encircled by green belts, whose main functions are to supply the town with fresh air, to make the local climate more equable and to provide space for recreation.

ORGANIZATION OF PLANNING AND BUILDING

New towns are planned and built on the basis of a uniform technical policy, which is drawn up and put into effect by the State Construction Committee of the Council of Ministers (Soviet Union *Gosstroï*). The Soviet Union *Gosstroï* and *Gosplan* jointly choose the sites of new towns, allocate the necessary capital, examine and approve itemized lists of large building projects, and supervise the execution of the building programme.

The new towns are planned by special planning institutes or by town-planning organizations under the direction of chief municipal architects. The building of new towns is financed by the State. A relatively small number of dwellings are built privately under co-operative or individual arrangements, with the help of long-term loans from the State.

The vast scale and rapid pace of new-town construction have been made possible by the industrialization of building, based on the prefabrication of housing components for assembly at the building site. The large-panel method of housing construction has developed rapidly in recent years. Large-panel housing built at Moscow increased from 1.1 per cent in 1956 to 70 per cent in 1963. Costs were reduced 25 per cent. The industrialization of building has helped to increase labour productivity on the basis of all-round mechanization of building operations. By 1963 91.8 per cent of earth moving operations, 92.5 per cent of the assembly of reinforced concrete parts, 84 per cent of concrete-mixing, 66.5 per

cent of mortar-mixing, 58.7 per cent of plastering and 64.2 per cent of painting were mechanized.

The development of prefabricated housing construction and the extensive production and use of reinforced concrete is based on the mass application of standard designs and on prefabricated components. The proportion of dwelling houses built to standard designs was no less than 90 per cent in 1963. Standard designs are prepared for each climatic zone. The validity of standard designs is set at four to five years, to suit the useful working life of the equipment and installations at the house-building plants.

Industrialization of building gives the best results when construction is concentrated at large building sites and the whole series of operations is performed by large-scale building organizations. For this reason the construction of new towns is, as a rule, carried out by a single building organization which constructs in the space of a year whole

residential districts and neighbourhoods, complete with public buildings, service installations, civil engineering works and amenities. The building process is normally divided into two parts. One building trust performs what is termed the zero cycle of operations (putting in the foundations and basements of the houses, laying water mains, sewers and heating-pipes, and road-making) and another assembles, fits out and finishes the upper structure of dwelling houses, schools, pre-school institutions, cinemas and other buildings. Of great importance to progress in urban development are experimental planning and building, which are carried out on the scale of residential neighbourhoods and even of whole residential districts with 25,000 to 45,000 people. The experiments provide opportunities to test and refine new planning and building methods, new principles for the organization of personal and new types and designs for dwelling houses, schools, hospitals, clubs, cinemas and other buildings.

ECONOMIC CONSIDERATIONS IN THE PLANNING AND DEVELOPMENT OF NEW TOWNS*

P. B. DESAI AND ASHISH BOSE

Accelerating urbanization in the developing countries has attracted increasing attention in recent years. The trend of the discussion suggests that the most crucial issue involved is the role of urbanization in economic growth. An understanding of the interrelationship between urbanization and economic development¹ should help avoid the problems created by the industrialization in the developed countries of the West.

Consideration of these questions is handicapped by the extreme paucity of relevant statistical data and theoretical formulations for studying urbanization. But it was pointed out at the Asian Population Conference that since deliberate steps to influence the future pattern of population distribution cannot wait until all the necessary data are assembled, decisions have to be made on the basis of the limited available knowledge.²

PATTERNS OF URBANIZATION

Development may be viewed as the evolution of the economy from a stagnant, pre-industrial state characterized by low incomes, predominance of the primary sector and the physical proximity of production and consumption, into a dynamic, diversified and integrated industrial economy.

A crucial problem of economic development is one of matching society's resources with the consumption needs of its people at minimal costs. Resources are quantitatively limited, though the full potential remains unknown. The problem of matching arises not only because land is limited but also because the spatial distribution of natural resources is invariably uneven. This matching of land with the other factors of production is mediated by transportation and communication. The efficiency of the matching will largely depend on the level of economic development.

The task for development is to rationalize the distribution of economic activities and to obtain a compatible

redistribution of population to benefit both production and consumption—to minimize the "space friction" faced because of unevenness of spatial distributions. This calls for a functionally integrated geographic structure of society in which communities of varying size may efficiently serve the over-all goal of the society. Regional balance must be defined by an ordering of communities to reduce the total per unit cost for aggregate economic activity in the society. And because of changing requirements the pattern of population distribution will constantly need adaptation and adjustment.

Development in western countries provides conclusive evidence that the force behind minimizing per unit costs of production and distribution was the main-spring of progress, leading to great advances of technology and evolution of an extensive and complex industrial structure. The accompanying population redistribution led to expansion of settlements into sprawling cities, permitting concentration of industrial and commercial activities (leading also to acute congestion of population). The city provided the external economies and permitted the economies of scale made possible by technological advances. Transport and communications played a key role, facilitating mobility of both population and resources. The development of transport acted both as the cause and the consequence in the process of population redistribution. Thanks to this redistribution there emerged a pattern of human settlements greatly varied in size and function.

What is important to remember about past tendencies of urban growth is that the basic motive force was provided by the search for profit. As this *laissez-faire* growth proceeded, concentrating economic activities and populations into larger and larger agglomerations, such as London, New York, Chicago and Tokyo, it came to be increasingly realized that what was apparently sound economics for each private individual operator was not so sound for the society as a whole. Rising social costs attributable to uncontrolled urban growth are clearly reflected in the mounting needs for public infrastructure, for measures to deal with human problems caused by congestion, and also for ameliorating the difficult conditions under which masses of under-privileged people live in cities. It has been recognized that constructive modifications of the pattern resulting from individual activities in search of private profit are bound to be spotty and are likely to compromise the functional

* Background Paper No. 5 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August to 7 September 1964.

¹ This should not be interpreted in the limited statistical sense as some writers have done. The high positive correlation between industrialization and urbanization has no relevance for policy formulations. What is relevant is the pattern of the industrialization-urbanization process.

² United Nations, Economic Commission for Asia and the Far East, *Report of the Asian Population Conference and Selected Papers*, New Delhi, 10-20 December 1963 (Sales No.: 65.II.F.11).

efficiency of the system as a whole. It is this general realization of the gap between private and social interests that has led most countries to the advocacy of social action in the interests of improving functional efficiency of given settlement patterns.

One lesson of western urbanization that the developing countries may profitably learn is that it is economic to have an over-all policy for guiding the course of urbanization process from the very beginning of development.³ The developing economies have many features suggesting that their industrialization and urbanization will have to be somewhat different on account of their historic background and the impact of western technology on social and economic life. Economic transition commenced during the colonial period. But the actual development was limited, tardy, unbalanced and oriented to the needs of colonial powers. Urbanization did make its appearance during the colonial period but it resulted in growth of primate cities, some like Calcutta and Djakarta emerging as agglomerations of quite unmanageable size. These cities function essentially as trade and administrative centres. Their integration with the domestic economy of their regional hinterlands remained only partial. Their growth is haphazard and unplanned. The manner in which urbanization occurred also helped retain rural modes of living within such cities.

Economic development has been an emerging force in most of these countries since World War II. This development has been directed towards the building of basic economic overheads. A number of heavy as well as light industries began to be established. But for the most part development is still in its first phase of foundation laying. Even so, there has been considerable acceleration of urbanization and this is evidently related to rapid population growth and the incapability of rural communities of accomodating further increase of population. This lends great urgency to the question of urbanization. The problem assumes two well defined questions: (a) the growth of existing primate cities; and (b) the setting up of new communities.

Lessons of western urbanization learned by these countries are, at least in theory, facilitated by the fact that they are undertaking national planning. Planning promises greater consideration of social needs as distinguished from individual interests that underlay western industrialization. To apply this lesson, planning has to be comprehensive and take a long range perspective. What is crucial is to achieve progressive integration of

the different sectors of economic activity through a phased programme of technological advancement. The major handicap is the current low level of incomes, lack of capital, and the great paucity of foreign exchange. The prospects for economic development are, however, enhanced by the increasing role foreign aid is playing in their development.

There is need for a positive policy which may help existing and new settlement units in promoting economic growth. The general criterion should be the functional integration of settlement units at different levels of the economy. In the evolution of such an integrated national pattern of development, new and satellite towns will clearly play a major role.

DEVELOPMENT OF SATELLITE AND NEW TOWNS

The case for development of new towns with a restructuring of existing towns to evolve a suitable pattern of population distribution rests on the ground that settlements are an important factor in the growth and efficient conduct of economic activity. The pattern of new and "renovated" towns will necessarily depend on the nature of economic development in general and technological advancement in particular.

Technological development in the field of transport is particularly important, though in most developing countries it is grossly deficient. Existing railway systems must be extended and adapted to suit new requirements. But a crucial role will be played by road transport. Since the bulk of transport development is yet to come it should be possible to render it suitable for the emerging pattern of population distribution.

The second important field of technological development is power generation. It is hydro-electric power generation that has attracted most attention in most developing countries. In India the installed capacity increased from 2.3 to 5.7 million kW during the first decade of planning (1951-1961). The present programmes suggest that electric grids will play a major role in power supply. Plans are laid out to develop a grid for the entire southern part of the country and ultimately for the entire country.

The problem of technological development in manufacturing is rather involved. The *laissez-faire* industrialization of the West led to large agglomerations in search not only of location and scale economies but also of what have been called urbanization economies,⁴ which accrue from the size of population, the infrastructure facilities and services. The question really is one of balancing the different types of economies of scale, location and urbanization.

The task for planning in the field of manufacturing is one of channelling new industrial activity to counteract tendencies of urban over-concentration noticed particularly in the private sector of the economy. In most

³ The observations of Catherine Bauer deserve careful study in this connexion: "It is sometimes assumed that the general principles for urban planning and improvement are universal, equally applicable to London and Tokyo, Bombay and San Francisco. But this seeming similarity between the metropolitan problems of advanced and developing countries can be highly misleading. For the dynamics of 20th century urban development in Asia is quite different in many respects from that in England or North America. Fundamental distinctions in time and place, as well as in degree of industrialization, all tend to affect the whole process, including the nature of the problems and the method of attacking them." (Catherine Bauer, *The Optimum Pattern of Urbanization : Does Asia Need a New Type of Regional Planning?* Working paper for the United Nations Seminar on Regional Planning, Tokyo, 1958, pp. 1-2.)

⁴ For a theoretical exposition of the different types of economies, see Walter Isard, *Location and Space-Economy: A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade and Urban Structure* (New York, 1956), ch. 8.

developing countries the bulk of the manufacturing sector consists of small-scale and household establishments. The problem here is to mechanize and rationalize. The most promising programme is that of industrial estates in which a pool of modern services needed by small individual *entrepreneurs* is provided. In fostering planned decentralization,⁵ it is possible to evolve patterns of technology which are neither contingent on large urban units nor lead to agglomerations of unmanageable size.

The functions for which planned development of new towns could be undertaken are varied. New towns are required in the development of space-bound natural resources. New towns are very likely also to play an important role in the progress of agricultural economy. Modernization of agriculture depends not only on marketing, storage and such other facilities, but also on services that are needed for improving agricultural practices: agro-industries for processing of agricultural products, tools and implements required by farmers, small-scale light industries and repair facilities.⁶

Apart from the high social cost of industrialization involved in further straining of the meagre social overheads in existing big cities, there are strictly economic considerations which inhibit the development of these areas. The utter inadequacy of industrial infrastructure in these big cities adversely affects the efficiency of the industries already located there.⁷

In existing cities there is a complex inter-mixing of functions; residences, commercial and industrial activities. Industries are concentrated in the most congested areas. Land values have moved up sharply during the last decade and rents are very high. These industries are in this sense over-capitalized. There is a clear economic case, therefore, for substituting these inefficient and non-

economic establishments with other functions which can utilize the space much more intensively.

The economic case for deconcentration of the form of the metropolitan area rests also on the ground of inefficiencies associated with congestion. The spatial distribution of functions involves a tremendous amount of cross haulage of both men and materials. There are also problems of slums and unhealthy living conditions. Thus, the case for an appropriate policy of industrial deconcentration can rest purely on economic considerations.

Large cities are continuing to grow because of migration from rural areas and smaller urban communities. The problem is not only one of deconcentrating the existing population but also of dealing with the continuing inflow of migrants. There is a clear case for developing new and satellite towns around such large cities within the region over which each city's influence is likely to spread to obtain a rational distribution of functions. Existing uneconomic uses have to be taken out and relocated in new and satellite towns. The spaces released may then be developed for intensive use by trade, administration, banking, insurance and other services which need this central location in the region. The redevelopment of large cities thus makes it imperative that the unit for planning must be the region. The regional approach to city redevelopment is catching the imagination of planners. An important example is provided by the Master Plan for the City of Delhi,⁸ which is now in operation. This plan seeks to redevelop Delhi City as part of a larger metropolitan region in which the existing towns surrounding Delhi are to be expanded and new towns set up as counter-magnets to absorb the prospective flow of migration into Delhi.

There is also the problem of providing for consumption. In the developing countries there is a strong case for increasing the levels of living more through socially supplied services and amenities than through increases in household and individual consumption. Development of community services is becoming increasingly important and it is but natural that these be given due place in planning.

High development costs are a major problem. A recent study of new industrial townships by an expert team of the Government of India⁹ was undertaken to find means to reduce their cost. The team pointed to the "immense scope for cost reduction in almost all stages through which a project has to be processed, starting from the authorization to the completion of works". The important thing to note is that "at the initial stages of planning, the scope is relatively greater". The team recommended that a Regional Planning and Development Authority should be established as soon as a decision to develop industries in a region is taken. This "will do away with piecemeal planning by individual authorities and avoid the uncoordinated development of services by

⁵ The conclusions of a study of industrial estates in India are pertinent to our discussion here: "It is very difficult to establish successful estates in backward areas where the necessary infrastructure of communications, markets and financial facilities is lacking. Some estates, which are situated in the neighbourhood of quite large towns offering reasonable general facilities, have nevertheless been slow to develop because of a shortage of local *entrepreneurs* and skilled labour." This study injects a dose of realism in the romantic ideas of decentralization when it says: "The policy of setting up estates at long distances from their neighbouring towns seems, sometimes, to be mistaken for a policy of decentralization of industry. The problem of decentralization is a problem of location and not of siting. It would be an odd kind of decentralization which merely resulted in estates being put up as far away as possible from their associated towns." P. N. Dhar and H. F. Lydall, *The Role of Small Enterprises in Indian Economic Development* (Bombay, 1961), pp. 44-45.

⁶ The two important aspects of a programme of broad-based industrialization are: "(a) development of transportation on the basis of regional planning, high priority being given to those lines of communication which will strengthen the growth of nuclei of industrial activity in the country-side; and (b) development of nuclei of industrial activity in the rural areas on the basis of establishment of small townships having a sound and suitable agro-industrial base". B. N. Ganguli, "Institutional implications of a border plan with special reference to China's experience" in Government of India, *Papers Relating to the Formulation of the Second Five-Year Plan* (New Delhi, 1958), p. 531.

⁷ A notable example of this is the city of Calcutta. The desperate situation in that city of electricity, water supply, drainage, transport, land values, housing, etc., is brought out by the set of tables and data presented in a study. See Ashok Mitra, *Calcutta: India's City* (Calcutta, 1963).

⁸ See "Metropolitan planning in India", part four of this publication.

⁹ Government of India, Committee on Plan Projects, "Report on Industrial Townships" (New Delhi, May 1963) (mimeographed).

individual undertakings which cannot but lead to duplication of efforts and increase their capital as well as running costs. The planning and development of services in an integrated manner will thus constitute a major step towards cost reduction”.

CONCLUSION

The planning and development of satellite and new towns in developing countries must be viewed as an integral part of the process of economic growth and social change. The over-all objective should be the evolution on the national scale of a suitable hierarchy of settlements conducive to balanced economic development. The crucial role of planned urbanization is one of minimizing the economic and social costs involved in laying the foundations of emerging modern industrial economies.

The prospects of rapid economic development in these

countries are limited by a number of factors, but have the advantage of coming late in the process of industrialization and urbanization. This gives them the opportunity for regulating industrialization and urbanization to avoid the costly mistakes of the western countries and to attend to the goal of maximizing social benefit.

The basic problem is one of attaining a functional integration of economic activities in each region within the national economy. There are compelling political and social considerations lending urgency to the problem of giant cities. The redevelopment of these cities as parts of larger urban regions through the instrument of satellite towns must be based on city-hinterland relationships. Three important economic purposes of new towns are the modernization of agriculture, serving the requirements of space-bound natural resources, and creating an adequate infrastructure for modernization of manufacturing.

FINANCING THE CONSTRUCTION OF NEW TOWNS*

P. A. STONE

It is difficult to generalize about the construction of satellite and new towns because of the wide range possible in size and content, and in the way development takes place. The only common feature about the towns, whose financing is to be considered in this paper, is that they will be created and will develop as a result of determined policy and will not be left to develop freely in answer to the unexpressed requirements of the people who come to live in them.

The construction of a town is a long-term process; the earliest parts will begin to function long before the final stages are commenced. In fact, there is no point in time when it is possible to say that construction is completed. Usually before a town is completed as planned, it will have started to evolve according to its own nature and to develop along lines only partially foreseen in the original plan. The division between the capital cost of its construction, its running expenses and its revenue will become less and less clear. There is little value in attempting to study the costs of initial construction alone; it is necessary to study the flow of expenditure and revenue as the construction of the town proceeds.

The financing of a town usually involves a large number of separate organizations. In Great Britain the new towns have been developed by special development corporations. Even so, other authorities and individuals have been heavily involved in the finance of the towns. The development corporations have acted as large-scale developers. The central Government has been responsible not only for financing the development corporations but for housing subsidies, for grants to various types of local and other authorities. Some buildings, churches and places of entertainment have been financed directly by firms, societies and individuals. Thus in one way and another, a considerable proportion of the finance is provided privately. Moreover, as the towns have developed, part of the further development is financed out of revenue. The financial arrangements can be varied in many ways.

The design of a town, its size, location and the quality of its facilities affect not only the costs of construction but the running costs associated with them. For example, decked shopping centres and tall buildings often cost more to construct and operate than ground level shopping and low buildings. Up to a point increases in the size of

a town will bring increasing returns and hence lower costs. But as the size increases the length of haul of passengers and goods and the length of service connections increases more than proportionately to size, and the advantages of large-scale will tend to be reduced and perhaps more than offset. In such circumstances, a higher density of development, even at extra cost, may be cheaper in the long run than low density because of a saving in hauling and travelling cost.

The greater the provision of facilities and the higher their quality, the more they cost. Not merely will a higher provision use more resources to meet the needs of the same number of people and hence tend to result in a reduction in the number of people for whom provision can be made, but it may lead to deprivation of other things and to facilities provided not being fully used. For instance, if housing is too expensive in relation to the income of the people for whom it is provided, it will need either to be subsidized, or to be paid for by the tenants of the housing at the expense of other needs, perhaps food. Or it may not be used to its best advantage: families may double up to reduce costs. It is, therefore, important that the scale and quality of provision should match the wealth of the people for whom it is intended, or at least match the wealth of the community that provides it. The concept of the right provision is relevant to all aspects of town development, for without this proper balance the urban facilities will not be viable.

SIZE, FORM AND LOCATION OF TOWNS

The larger new towns are better able to provide a complete range of occupations and a complete set of urban facilities. Clearly the relatively large town offers important advantages in industrial and economic stability and in meeting every sort of urban need. With a large variety of types of industry and commerce controlled by many separate organisations, the town is less likely to suffer from heavy unemployment or from its youth drifting away to other towns offering more diverse opportunities. Some services will be cheaper because of the economics of scale. But size adds to the complications, time and costs of internal transport of getting utility services to their terminal points. Beyond a certain size the administration of the town's services may become increasingly costly per unit of service. In some circumstances clusters of individual towns, each largely self-sufficient, but relying upon each other for the more special and less used urban facilities, will be more eco-

* Background Paper No. 7 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August to 7 September 1964.

nomic to construct and operate than large single towns.

Many forms of town have been tried or considered. In shape towns may be round, linear or star shaped. They can differ widely in density. Their development can be horizontal or vertical. The form of the town, as well as its size, can have a profound effect on the costs of construction and on the running costs and hence on its viability, as well as on the quality of living which it affords.

The location of a town can also affect construction and running costs. The costs of construction will be affected by the nearness to suitable raw materials and transport. If the supply of construction labour is inadequate costs will tend to rise and construction may be delayed. Costs may also be high if there is not an adequate number of contracting organizations. Location is also important in determining operating costs, particularly of the costs of living and of production. Clearly industry in a town which is unduly far from sources of raw materials, or from markets, or with poor communications will use more resources to produce the same value of output and will therefore be at a disadvantage compared with industry elsewhere and hence less capable of forming the base for its viability. Clearly size, form and location and the many factors associated with them must be considered in assessing the likely financial success of a town.

COSTS OF TOWN CONSTRUCTION

The costs per unit of capacity of constructing a town must inevitably range widely, depending on its size, form, quality and location. Measuring the costs of construction of a town is statistically difficult and very few reliable cost data are available; certainly it is not feasible to compile a table showing the costs per head for even the main types of town. The statistical difficulties arise from a number of causes. First the number of possible samples is inevitably small, since few towns are designed, developed and brought to recognisable completion in a short enough period to provide comparable and up-to-date costs. The second difficulty arises from the number of separate organizations and individuals concerned in the financing of a town. Many of those concerned will have no particular interest in recording separately the costs for a particular town. Again, costs will be transferred as a result of grants and charges, making it difficult to determine exactly what the town has cost.

One method of estimation which avoids some of these difficulties is to construct a hypothetical town which reproduces the features of a town of a given size, form and quality. This can be done from an analysis of the physical construction of existing and planned towns and can be used to determine the quantities of each type of construction which can be figured by reference to the current costs of urban development. This method has been used¹ for the analysis of the construction costs of

towns in Great Britain. The results of these analyses will be used here to indicate some broad order of town construction costs for towns of various types.

The cost of constructing the hypothetical town to the standards normal under British conditions for 80,000 persons worked out at £10.7 million per 10,000 persons, or about £1,100 per person. Of this the largest single element was housing which together with the necessary development and public utilities cost about 55 per cent of the total. The proportion of costs for industry, education and general engineering works was also high. Of the types of building, housing accounted for 45 per cent, commercial and public building 9 per cent, industrial building 13 per cent, schools 5 per cent, and public utilities and roads 20 per cent.

Thus, the cost of constituting a new town is equivalent to about three times the gross output per year per head of population under British conditions. This ratio has been broadly constant in normal times both in the United States of America and Great Britain. The ratio broadly held for most European countries as well.

The main factors to be considered on the cost of dwellings are:

Area. Figures published² indicate that whereas in Great Britain the typical floor area per person is around 160-180 sq. ft., 50 to 60 ft. appears to be a more usually recommended figure in Asia and Africa, though their living space is often greater because in some climate open air space can be used much of the time. The cost of a dwelling rises proportionately less than size. Tender prices for low-cost housing in Great Britain rose from 5 to 6 per cent for a 10 per cent increase in area.³ The housing costed in table 1 provided about 180 sq. ft. of floor area per person. If the area were reduced to the current standards in the Soviet Union,⁴ at 100 sq. ft., the cost might fall by about 20 to 25 per cent. There might then be a saving of £1 million in the cost of housing for 10,000 persons. This relationship between area and cost can only be applied within certain limits of change in area.

Family size. Another factor which affects the cost of housing is the size of the family. In two-storey housing the costs per person rise from about £420 for five-person, three-bedroom houses to about £580 in two-person, one-bedroom houses, a rise of about 40 per cent. The proportionate rate of increase is about the same for both houses and flats. There are two reasons: the perimeter of an enclosed area increases less than its floor area; the kitchen and bathroom units are much the same over this range of size.

Standards. Another important factor in the cost of housing is the standard provided. This is dependent

² G. A. Atkinson, "Recent advances in low cost housing in tropical areas," Proceedings. Sixth International Congress on Tropic Medicine and Malaria, vol. VI, 5-13 September 1958.

³ W. J. Reiners, "Planning the cost", *Chartered Surveyor* (London), May 1958.

⁴ R. W. Porter, "The Soviet construction industry", *The Builder* (London), 30 September 1962.

¹ Except where noted the data presented in this paper are drawn from P. A. Stone, "Housing, town development, land and costs" (London, The Estates Gazette, Ltd., 1962).

Capital cost of constructing urban town facilities for 10,000 persons*

£000s

Item	Neighbourhood	Industrial area	Town centre	Higher education	Open space	Other	Total
Land	32	6	1	3	4	7	53
Houses (2,857) . .	4,828	—	—	—	—	—	4,828
Commercial and public building .	327	50	584	—	—	—	961
Industry	—	1,400	—	—	—	—	1,400
Schools with playing fields . .	191	—	—	340	—	—	531
Open space	30	12	1	—	21	—	64
Transport	—	—	—	—	—	62	62
Public utilities . .	513	100	31	—	—	363	1,007
Roads, sewers, etc.	653	120	53	—	—	300	1,126
Other	—	—	—	—	—	629	629
TOTAL	6,574	1,688	670	343	25	1,361	10,661

SOURCE: P. A. Stone, "Housing, town development, land and costs" — (London, The Estates Gazette Ltd., 1962).

* These figures relate to the first twelve new towns. The latest group of new towns may have slightly different figures, and may be more expensive, but it is not expected that these will be much different in the pattern of land use.

mostly on the climate and the standard of living. A significant proportion of the costs of a dwelling in Great Britain are for the engineering services. Heating, lighting and water services can account for 15-20 per cent of the cost of a dwelling.⁵ Lifts can account for 5-6 per cent of the cost; a water-borne refuse system can cost as much. Finishes can add 10 per cent to the costs of a dwelling. The higher standards for dwellings were expected to add 10-15 per cent to the cost of a dwelling.⁶

Houses and flats. In Great Britain, flats are generally more expensive to build than the traditional two-storey house, especially if there must be a lift. Costs per person housed, for the same floor area and level of amenity, rise from about £420 at two storeys to about £780 at twelve storeys. The reason is that the structure is more expensive; access to flatted dwellings in high blocks is more expensive than to dwellings on the ground; there is extra space, fire-proof staircases and lifts; and solutions to problems of heating and refuse collection are usually more expensive. It has been usual in Great Britain to build smaller flats than houses to reduce their costs.

Design and construction. The relationship between the cost of houses and flatted dwellings is not the same in all countries, partly because of genuine differences in the construction economy and partly because the definitions of houses and flatted dwellings are different. For instance, in the United States, the economics of construction favour the blocks of flats over houses.⁷ Again, where it is necessary to blast away the rock to construct founda-

tions, as in parts of Sweden, it is economic to use forms of building which spread the cost of foundations over many floors.

Professional and self-help construction. Again, in some countries the inhabitants may be skilled in erecting dwellings for themselves which, although offering a lower standard of amenity than professionally built houses, are much cheaper for the standard of amenities they provide. In the short run, where financial resources are very limited, help with self-built houses, as compared with contractor-built housing, may release resources for other purposes.

The cost structure for roads and public utility services is as follows: roads can be divided into two types, feeder roads, and distribution roads, while utility services can be divided into three elements, terminal facilities, feeder networks and distribution networks. In the generation of gas and electricity and, to some, in the treatment of sewage, it is usually economic to construct large plants even though this necessitates long feeder networks to a number of separate towns. Feeder roads and feeder networks tend to increase in cost *per capita* with increases in the size of area served and thus to offset to some extent the savings from the scale of the terminal facilities. The cost of distribution networks vary with the density of development. It was found that the costs of distribution roads and sewers, including general site clearance, varied from about £250 per dwelling at the density of eight dwellings per acre to about £60 per dwelling at densities at forty to fifty dwellings per acre.

Finally the cost structure for commercial and public and industrial building is as follows: in some countries, retail trade may be largely through open markets, greatly reducing the costs of construction. Again, to obtain high densities, high multi-storey buildings and decked space may be required. Both tend to be more expensive than

⁵ W. J. Reiniers, "The tender prices of local authority flats", *Chartered Surveyor* (London), August 1958.

⁶ Great Britain, Ministry of Housing and Local Government, *Homes for Today and Tomorrow* (London, H.M.S.O., 1961).

⁷ P. A. Stone, "International comparison of building costs with particular reference to U.S.A. and Great Britain," *Bulletin*, Oxford University Institute of Statistics (Oxford), vol. XXII, No. 2, 1960.

low buildings. For example, a deck over roads, or parking areas to provide a pedestrian concourse might cost upwards of £1 per square foot, that is, over £300 per car parking space.⁸

In the case of industrial buildings the requirements of the equipment and process are often as important as the requirements of the workers. For some trades, fairly narrow limits of temperature and humidity must be observed. For others, good lighting and average conditions of temperature suitable for the operatives are adequate. In countries with suitable climates, particularly where industry is on a small scale, small buildings erected by local craftsmen may be suitable and much cheaper than the type of building necessary in Great Britain. Again, however, multi-storey buildings are usually more expensive and often less useful, than single-storey buildings.

DENSITY AND LAND REQUIREMENTS

The land requirements of the hypothetical new town were figured in a similar way to the costs described earlier. This suggests that about 530 acres would be needed for a population of 10,000 persons, giving an over-all gross town density of about nineteen persons per acre. About a third of the land would be for houses and gardens, a quarter for open space and over a sixth for roads.

Residential land. There are practically no limits to the range of densities for individual houses, even in British conditions, at less than one to the acre or at fifty to the acre. In Great Britain it is difficult to provide even adequate daylighting at thirty dwellings to the acre, and generally individual housing is sited at much lower densities. The density typical for current private housing development is about eleven dwellings per acre. The fourteen dwellings per acre assumed for the hypothetical new town is therefore quite high. The density which can

be achieved depends in the main, on the desired daylight and sunlight, privacy required, the traffic to be generated, parking facilities required and the necessary open spaces. For instance, in Great Britain it is difficult to provide individual garages at densities greater than about twenty dwellings to the acre.

The most important factor of densities in Britain is the private garden. At about three dwellings per acre, the private garden will normally account for over two-thirds of the total land in the net residential area. This ratio is likely to be about a third at thirty dwellings per acre. There is little or no saving at the latter density to eliminate the private garden since an equal space around the building is necessary for daylighting requirements. While the private garden may be mainly for amenity purposes, it may provide in some countries an important place to grow food.

While land requirements in residential areas are considerably affected by the size of private gardens, they are influenced to a far smaller extent by the number of storeys to which the housing is developed. It is possible to house 10,000 persons on about 100 acres of land in two-storey houses. But the amount is reduced by less than 50 per cent even when twenty-storey development is used. Savings in land decline progressively as the number of storeys in the development is increased. When these savings are set against the land needed for the other urban purposes (300 to 400 acres per 10,000 persons), they tend to look rather small. In fact, higher densities may not be achievable if a large proportion of the residents require space for parking cars.

The number of storeys is apparently not an important factor in determining density. Space standards are of far more importance. A reduction in plot width from sixty to sixteen feet with a proportional fall in the length of the back garden will result in about a tenfold increase in density from ten to 100 persons per acre. Increasing the number of storeys has two main effects. It results in a smaller proportion of land being covered by buildings

⁸ Great Britain, Ministry of Housing and Local Government, *Homes for Today and Tomorrow*, op. cit.

The use of town land for 10,000 persons

Acres

Use	Neighbour- hood	Industrial area	Town centre	Higher education	Open space	Other	Total
Houses and gardens	175	—	—	—	—	—	175
Commercial and public building .	19	1	4	—	—	—	24
Industry	—	20	—	—	—	—	20
Schools with playing fields . .	13	—	—	27	—	—	40
Open space . . .	67	24	1	—	38	—	130
Transport	—	5	—	—	—	7	12
Public utilities . .	—	—	—	—	—	24	24
Roads, etc. . . .	49	10	4	—	—	28	91
Other	—	—	1	—	—	11	12
TOTAL	323	60	10	27	38	70	528

SOURCE: P. A. Stone, "Housing, town development, land and costs" (London, The Estates Gazette Ltd., 1962).

Housing land per 10,000 persons

Type of dwellings		Persons per acre ^a		Land per 10,000 (acres)
Two-storey with private gardens	Frontage (in feet)	60	10	1000
		30	32	313
		24	49	204
		20	68	147
		16	98	102
Flatted dwellings without gardens	Storeys	2	110	91
		3	130	77
		4	142	70
		5	151	66
		10	173	58
		15	182	55
		20	186	54

SOURCE: P. A. Stone, "Housing, town development, land and costs" (London, The Estates Gazette Ltd., 1962).

^a Calculated at 3.5 persons per dwelling or 0.89 persons per habitable room.

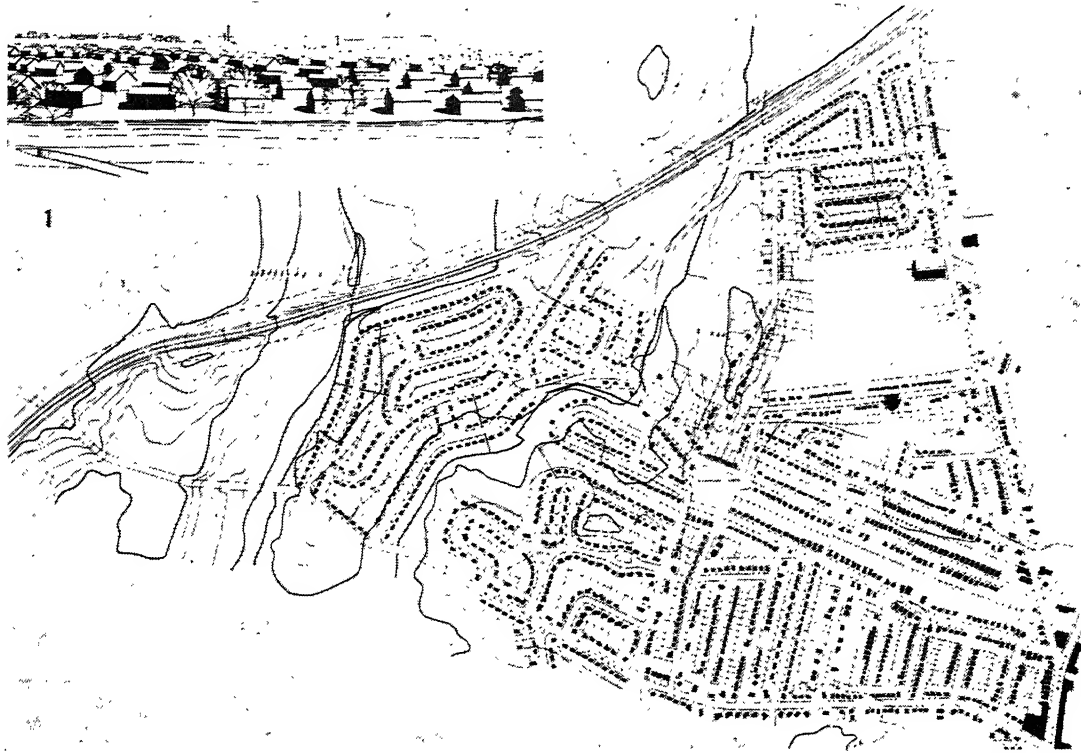
and in the area about buildings being available in larger more unified spaces. There is, of course, no increase in the space about buildings per head of population, in fact, there is some small reduction.

The assumption for the hypothetical town was for dwellings with private gardens at fourteen to the acre, equivalent to forty-nine persons per net residential acre. Thus the residential land requirement per 10,000 persons was 204 acres, the balance over 175 acres being for roads, footpaths and small incidental areas of open space. If high blocks were used without private ground space the figure might fall to as little as fifty acres per 10,000 persons. If the floor space per person were reduced to forty sq. ft. and high blocks were used without private ground space, the area for 10,000 persons might be as little as ten acres. This, of course, would be unworkable if there were much traffic. Nevertheless, the possible range of area of land required can be considerable, depending on the form of housing and the space standards provided.

Land for other purposes. It was shown that land in the residential area could be saved in three ways, by reducing the area of ground space per person, by reducing the area of floor space per person and by building high. These methods can be used in the rest of the town. A useful aid to detecting where land savings are possible is to analyse land requirements by function and use. The analysis for the hypothetical town indicates that about 12 per cent of the land is covered by buildings, 13 per cent by land surfaces for storage, parking and circulation, 58 per cent by gardens and open space and 17 per cent by roads and car parks. The area covered by buildings and the surfaced area can be reduced only by cutting space standards. The area of gardens and open space is generally less essential and if lower amenities are accepted substantial reductions on land area might be possible. Clearly, since only about 5 per cent of the land is used for non-residential buildings the savings of land from these forms of development must be small. The effect on land requirements of developing non-residential buildings with a

The use of town land per 10,000 persons (hypothetical new town)

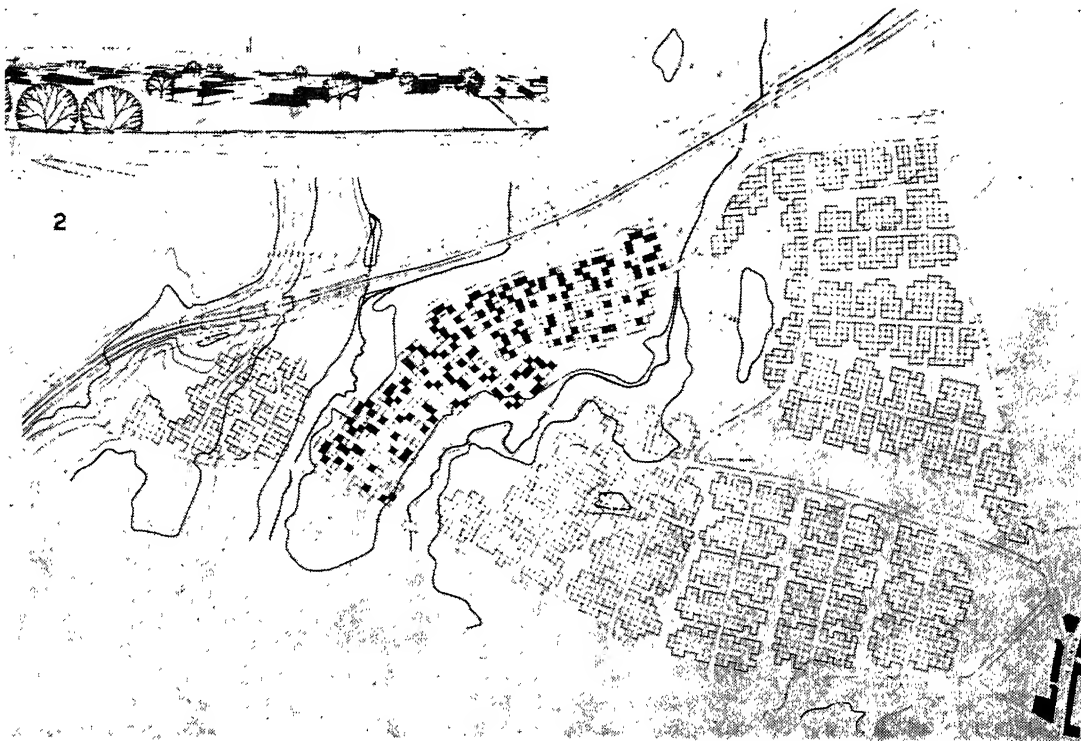
Acres					
Classification	Land covered with buildings	Areas for storage, parking and circulation	Gardens and open space	Roads	Total
Houses and gardens (mainly 2-storey) . .	35	—	140	—	175
Commercial and public building (mainly 2, 3 and 4-storey)	5	19	—	—	24
Industry (mainly 1-storey buildings) . . .	10	10	—	—	20
Schools with playing fields (mainly 1 and 2-storey)	4	—	36	—	40
Open space	—	—	130	—	130
Transport	2	10	—	—	12
Public utilities	4	20	—	—	24
Roads and public car parks	—	—	—	91	91
Other	2	10	—	—	12
TOTAL	62	69	306	91	528
Percentages	12	13	58	17	100



Credit: Yale University Press

Population density variations

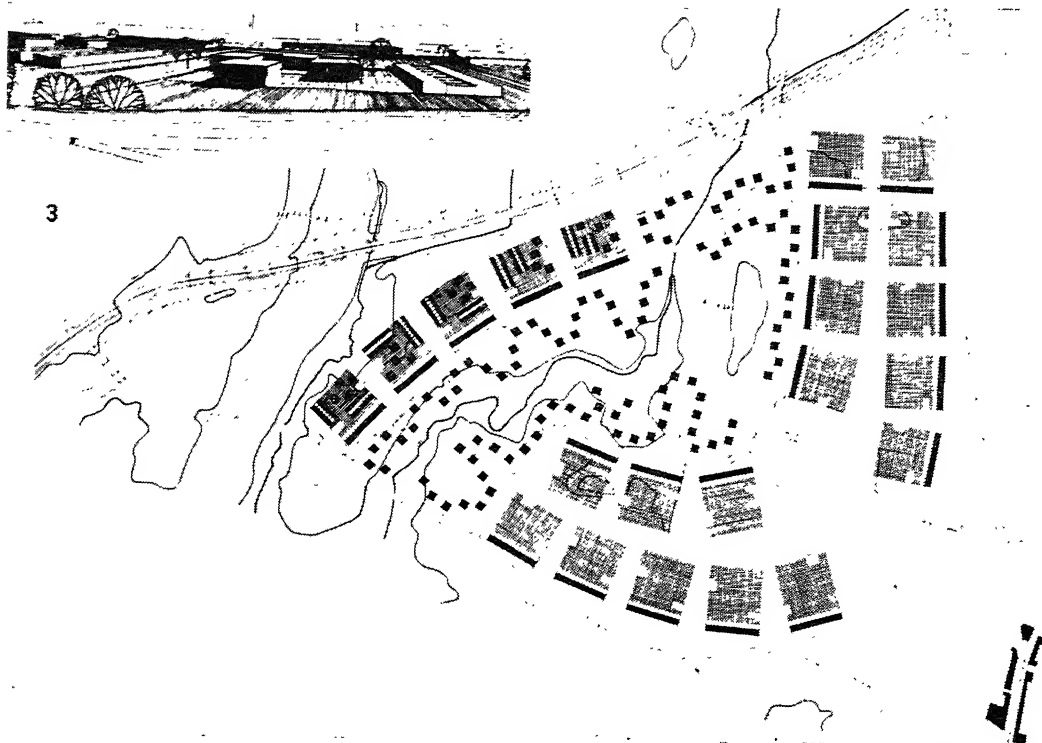
Possibilities of residential density I: typical existing development of detached single-family houses in a conventional street pattern with 5 families per net acre



Credit: Yale University Press

Population density variations

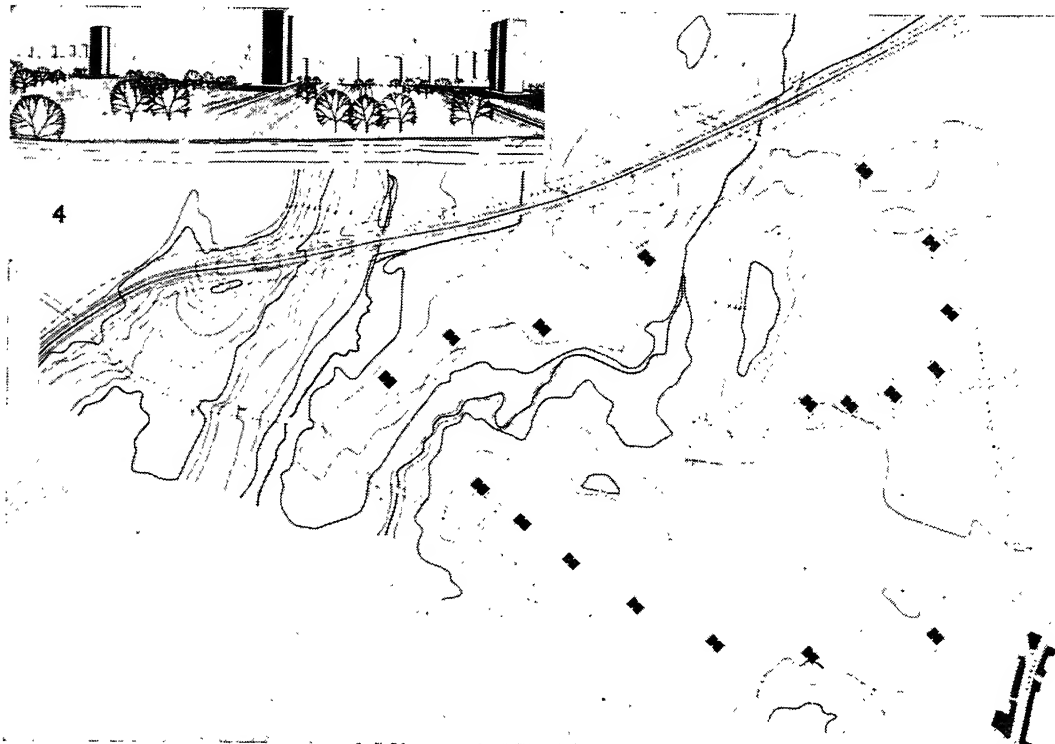
Possibilities of residential density II: semi-attached single-family houses in clusters with 7.5 families per net acre



Credit: Yale University Press

Population density variations

Possibilities of residential density III: attached two-storey row houses with enclosed courts, 15 families per net acre



Credit: Yale University Press

Population density variations

Possibilities of residential density IV: apartment towers, 60 families per net acre. To illustrate the gain in open space with higher density and lower coverage, the total population of the study tract has been kept constant in all four examples, with a gross density of 3 families per area or 6,500 persons per square mile. Designs by Rachel Weiler

greater number of storeys and of decking over roads and parking areas in the town centre to permit a double use of the land is rather small. The possible land savings by building tall blocks of dwellings are relatively greater.

THE COST OF LAND

Land is not a produced good, it was provided by nature; it is not destroyed by being used for urban development but, while in this use, it is not available for alternative uses. Thus while the cost of national resources for produced goods is the value of the labour and materials consumed when used in the best alternative way, the cost for land is the additional costs of producing elsewhere what the land would have produced in its next best use had it not been used for urban development. The cost of converting the land from its present use to an urban use is, of course, included in the costs of development.

The supply of building sites is broadly fixed, so that their prices are determined by demand, and since their value varies from one purchaser to another their price tends to be that set by the purchaser for whom they have the highest value. The value to a purchaser tends to depend on the relationship between costs arising from land and those from other factors of production. For example, under British agricultural conditions, the annual value of output per acre is usually only about £50. In contrast, the output from an acre of offices can be on the order of £10 million per annum. Even a rent on the land of £500 represents only 0.005 per cent of the value of the output. Clearly, other things being equal, sites will always tend to go to the uses for which site costs are less important.

Commercial land values represent the value to the user and not usually the value to the community, since the commercial user can pass on to others many of the real costs of his using the site, for example, traffic congestion, air pollution, noise and unsightliness. The value of land must, therefore, be considered in two contexts, the commercial value and the value to the community. The community value can be found by ascertaining the resource cost to all members of the community of a piece of land being used in one rather than another way.

Since the commercial price of land tends to reflect the value of the urban facilities around it, developers, whether private or public, can only obtain the full commercial value of their work by acquiring all the land whose price is likely to be affected by their development before proceeding.

The extent to which the saving of land, by using some other form of building, is worthwhile can be found by comparing the costs of alternative forms of development per acre of land saved against the value of the land in the best alternative use. In Great Britain the capital cost to the community of saving an acre of land by using multi-storey flatted blocks instead of the traditional two-storeyed housing could be as much as £50,000. In the final analysis the land saved would be agricultural land, the net annual output of which does not exceed in

The capitalized cost to the community of saving an acre of land by building high flats instead of two-storey housing

<i>Block height of flatted dwellings</i>	<i>Density dwellings per acre</i>	<i>Capital cost per acre of land saved (£)</i>
2	20	—
3	26	26,000
4	31	30,400
5	33	45,800
6	38	46,400
7	40	48,800
8	41	50,800
9	42	52,600
10	43	53,800
12	44	56,400

SOURCE: P. A. Stone, "Housing town development, land and costs" (London, The Estates Gazette Ltd., 1962).

Great Britain £2 to £3, so that its capitalized value is only about £50.

THE COSTS OF DEVELOPMENT TO THE COMMUNITY

The transfer of costs from one group of the community to another is likely to occur in any aspect of development and the decisions of the community should be based on assessments of the total effect of the developments proposed. The greater the area of responsibility of the development authority, the less risk there is of conflict between the interests of particular developers and the town as a whole.

The new town development corporations in Great Britain have tended to provide comprehensive development facilities but to leave some development work to others. Some of the housing estates have been developed privately on land purchased or leased from the development corporations and some industrial and commercial buildings also have been developed privately. The public utility services have generally been provided directly by the authorities responsible. In the case of water there was not always an agency prepared to extend its service to the area of the new town and the development corporation itself became the water authority. The normal system of local government has operated in the new towns and a local authority has provided the usual services. Transport organizations, such as railways, have undertaken their own development. The corporations have been able to obtain grants and subsidies for building low-cost housing, similar to those available to local government authorities. The finance for development has been made available on loan by the central Government and as financier they have over-all control over the corporations' activities.

The development of the town has implications not only of resources to be used in its construction but also in its running and in the individual, social, commercial and industrial life of the town. The building and engineering services must themselves be maintained in an efficient operative state. The costs of carrying out this work will depend to a large extent on the planning and design of the

urban facilities. Maintenance costs will be raised if short-life materials or structures are used, or if the materials used need frequent cleaning or painting. Again, the heating, ventilation and lighting costs of some forms of building are more expensive than others. To some extent savings on construction costs may result in increases in running costs. The two types of costs must be considered together either in the form of the sum of capital and capitalized running costs, or as the equivalent annual cost.⁹

Running costs will also, of course, increase with the volume of facilities, but may be proportionately less than the actual facilities. For example, heating costs do not normally rise in step with the floor area and maintenance costs may fall per unit as the number of units is increased because the wear and tear per unit falls. In this way, while the area of road to maintain will tend to increase as density falls, the unit costs may fall as usage becomes less intense. The development of building vertically, particularly housing, tends in Britain to raise running costs as well as construction costs. This is partly because circulation tends to become more expensive, more staircases are needed and lifts must be provided, and partly because more facilities fall into the economic sector and must be maintained by paid labour instead of by individuals in their private time. Maintenance and service costs of dwellings rise almost as rapidly with the number of storeys as do the construction costs.

When work is transferred from private individuals working in their spare time to an organization it becomes a charge, initially on the organization but subsequently on the individual for whom the service is done and on the community. This is another aspect of self-help. The individual family is materially better off to the extent to which it can provide services for itself, rather than

having to pay others from its income. Thus, living standards may be raised by incorporating circulation space within the private area of a dwelling rather than in a public space. Similarly, private gardens are a family and private concern whereas public open space is tended by paid labour.

The size of the town, the extent to which it is self-sufficient and the relationship of its parts also affect the cost of services. Studies of travelling expenses in Great Britain indicate that costs rise rapidly with the size of town. In small towns travelling costs were found to be around two shillings a week, rising to five shillings in large towns and ten shillings in London. A town layout in which places of work are badly sited in relation to the residential areas will also give rise to high travelling expenses. The distance and convenience for shopping and education is also important. The layout of the town and the convenience of the road system will also tend to affect other transport costs.

THE PROGRAMME OF DEVELOPMENT

While it is important to assess the costs and consequences of development of national resources to secure the most economic town, this in itself is not sufficient. It is also necessary to examine whether there are adequate national resources to finance the town and whether the distribution of costs and benefits to the individual groups needed to participate will secure their co-operation.

The development of towns and other forms of capital formation must be financed from home savings and borrowings. The capital required for housing and other facilities is usually very large compared with the resources available. This is especially true in under-developed countries and may affect the rate at which development projects can be undertaken. There is, therefore, a need to ascertain whether there is any optimum programme of town development which it is desirable to follow even at the cost of postponing development elsewhere. This again can be assessed by estimating the total capitalized or equivalent annual cost of alternative pro-

⁹ P. A. Stone, "The economics of building designs", *Journal of the Royal Statistical Society*, (London), No. 123A(3), 1961; P. A. Stone, "Cost prediction, a guide to design decisions", *Architect's Journal* (London), 2 March 1961; P. A. Stone, "Factory building, evaluation and decision," *Better Factories*, Institute of Directors (London), 1963.

Comparable annual community costs per dwelling of three-bedroom dwellings in a central area in the provinces

	Three-bedroom dwellings in multi-storey flatted blocks									
	2-storey (£)	3-storey (£)	4-storey (£)	5-storey (£)	6-storey (£)	7-storey (£)	8-storey (£)	9-storey (£)	10-storey (£)	12-storey (£)
<i>Annual cost to the community</i>										
Dwellings including work within urtilage	81	97	110	120	127	133	137	142	145	150
Site clearance, levelling, roads, sewers and public utilities	17	15	14	13	12	12	12	12	12	12
Estate running costs	33	33	33	45	45	45	45	44	44	44
Other community costs — expressed as the difference from the costs of 2-storey blocks	—	1	1	2	2	2	2	2	2	2
TOTAL	131	146	158	180	186	192	196	200	203	208

SOURCE: P. A. Stone, "Housing, town development, land and costs" (London, The Estates Gazette, Ltd., 1962).

grammes. Linear programming may have a useful part to play in this process.

The problem of securing the co-operation of the participating groups is partly a question of physical co-operation and partly of financial co-operation. On the one hand, it is necessary to persuade people to reside in the town and to set up industry and commerce, and social facilities; on the other hand, it is necessary to persuade people to use private finances to supplement public finances in developing and running the town. The programme of development must be determined according to these two sets of conditions, as well as in the availability of national resources.

PHYSICAL CO-OPERATION

The main regulator of the influx of population is the creation of jobs. Jobs may be divided into two classes. Primary jobs are those in industry and commerce producing goods and services for the country as a whole. Secondary jobs are those in organizations serving the people of the town and which hence depend on the primary jobs. Primary jobs are the first consideration. Usually the spread of occupations during the development period should be broadly in line with the final spread required. The spread of jobs should be wide enough, and of the right proportions to provide employment for all members of the families requiring employment, young and old, male and female. This is important not merely to ease the problem of attracting population but also to increase the earning capacity of the inhabitants and improve the viability of the town.

The level of amenities and facilities is also important. People going to a new town, particularly in the early stages, will normally be prepared to accept some inconvenience in the early stages. The acceptable level will depend on the standards to which they are accustomed and the distance to be travelled to obtain supplementary services elsewhere.

The provision of adequate services during the early stages may be difficult since the level required for adequacy may not yet be viable. It may be possible to find temporary solutions, such as temporary main distribution networks of limited capacity. For electricity these may be put overhead. Main pipe-lines may be laid along the ground, a full capacity network being installed and buried later when full-size cables and pipes are necessary. It may be worthwhile to provide these services at normal prices, even if in the short run this is uneconomic.

To obtain the best solution, it is necessary to test various programmes of developing the town, making allowance for both permanent and temporary buildings and works, and for any necessary subsidies. The technique of critical path analysis might be useful to determine the best use of resources. It will be necessary to ascertain how to attract jobs and population in balanced numbers at various rates of growth. It is also necessary to ascertain at what point initially planned development should

cease and development determined by the town's own momentum be allowed to take over.

FINANCIAL CO-OPERATION

There are, of course, numerous ways of financing the creation of a town, ranging from a development organization which finances the whole development and perhaps provides many of the services and obtains a rent income, to an organization which plans and programmes the town, perhaps owns the land but leaves the development to individual developers, with their own sources of finance, who conform to the over-all plan. Usually, the less the work which is carried out by the main development organization itself, the less the control that can be exercised by it over the details of the plan. Individual developers, whether private or public, naturally try to carry out the development in the way which will give the best returns to them. This makes it difficult to co-ordinate the plans of individual developers into a harmonious whole. Moreover, there is usually a reluctance to undertake developments from which little or no direct return is to be expected. This makes it difficult to get provision of nonremunerative facilities and facilities which will only bear full fruit a long time ahead. It is difficult, for example, to persuade individual developers to provide road and pipeline services larger than their own immediate needs, to provide general open space or welfare facilities. Usually the main development organizations must themselves accept responsibility for providing general services.

The extent to which the main development organization itself needs to undertake development largely depends on how far it wishes to control the detailed development. If the wish is to avoid all financial obligations then control must probably be limited to rules specifying the general standards. It is important, of course, to control all development so that all financial benefits accrue to the main development authority, and so that developers who have not been involved in financing cannot obtain an unearned financial benefit.

The alternative, where finance is very limited, to inducing other developers to carry out the development, is to sell the buildings either to occupants or investors as soon as possible. If such sales take place before the population is of a size and quality to provide the proper conditions for financial success a speculative profit may eventually be secured by the new owner. The creation of speculative profits is less likely when the population is built up closely in step with the facilities provided.

RESOURCES AND RATES OF DEVELOPMENT

New towns must function within the framework of a developing country. They must seek to minimize expenditures. They must create conditions within which economic growth can take place. And in their way they must create an atmosphere which prompts the best development efforts. For example, if a substantial programme of work can be seen about with confidence,

additional resources are likely to become available. The development organization can also reduce the effective financial load by organizing self-help schemes. These might take the form of arranging to supply families with plans and materials, or prefabricated parts for dwellings, or arrangements for co-operative work on roads, landscaping and other communal facilities. Such arrangements will only be beneficial to the community when carried out during time which would otherwise be non-productive. It may be necessary to provide a considerable amount of paid assistance to organize the self-help work, perhaps to train individuals.

The quality of amenity and urban facilities which the town aims to provide must also be considered against both national resources and the town finance. In the long run, unless the town is to be permanently subsidized, the cost of the level of provision and of its servicing, must be balanced with the share of income which the inhabitants can afford to devote to building and town services. The more efficiently the town has been planned the higher the level of quality the town economy will be able to sustain and the more the town will be able to improve over the years. The level of amenities and facilities which the town will be able to sustain cannot be very much higher than the general level of towns at the time the new one is planned. But the new town can have an improvability built into it that is not possible in most existing towns.

On the other hand, the consequences could be unfortunate if the initial planned levels were such that the town needed expensive redevelopment in a comparatively short while to meet improving standards. For example, self-help measures which lead to a shanty town or disease-ridden slums would hardly be an economic use of resources. The standards, and the rates at which standards are to be changed, need to be considered in planning a town. Shelter, sanitation, health and education, are services usually considered of first importance. It may be better to concentrate initially on these and to postpone work on others, rather than to attempt everything at a lower standard. Again, some services can economically be staged and be gradually completed over a number of years, while others need to be completed immediately. Water services could be provided through community taps, with subsequent extension into the separate dwellings when the town becomes more prosperous. On the other hand, if the distribution and main networks were not large enough to supply the full service subsequently, the temporary solution might prove wasteful in the long run.

Buildings can be permanent or temporary. Permanent buildings can be designed to allow for extension and adaptation as standards are raised, or their use can be changed as more suitable buildings are subsequently erected for their former uses. It is not always possible to construct temporary buildings more cheaply than permanent ones and it may be found that when allowance is made for the running costs and the shorter life, the annual costs of temporary buildings in some situations are greater than that of permanent building.

INVESTMENT AND SAVING

While it is important to obtain the right balance of expenditure on resources so that the creation and running of the town does not put an unfair burden on the community, it is also important to obtain a fair balance between expenditure and revenue, both nationally and locally. This will be particularly important so that a balance between investment and saving will help avoid inflation.

It is convenient for this purpose to divide development costs into three groups: (a) the costs of buildings and facilities intended for individual persons and groups, including houses, commercial and industrial buildings; (b) the costs of communal facilities, such as schools, law courts and government offices; and (c) general development, roads and public utility services. Broadly, in the hypothetical new town about four fifths of the capital expenditure can be associated, directly or indirectly, with private persons and firms, that is, with housing, commercial and industrial buildings and their sites. It is generally in this sector that the new town corporations in Britain have been concerned. How much of this type of capital expenditure is made privately and how much is retained as an investment by the development organization depends on policy. The amount of debt which a development organization would build up in financing the construction of a new town depends on the rate of development and the form which it took as well as on the proportion of property sold to the private sector. The amount of loan required can easily be predicted for any particular situation. On the basis of building one-fifteenth of the town each year the amount of indebtedness would be proportional to the cost of construction during the first fifteen years if no property was sold, the rents only about balancing interest. The debt would then fall slowly, nearly a half of it would be outstanding after a further twenty years. If the property were sold as completed the indebtedness would never rise above about 15 per cent. Some crude figures prepared from British new town corporation figures indicate an experience intermediate between these positions. The amount of debt accumulated by the development authority will be only a little less in the early years if sales of property are made on mortgage advanced by the authority itself, unless deposits and repayments are very high.

If the finance of the town is not to be inflationary the money must be taken out of the economy somewhere else. Money may be raised by taxation, internal government loans or by overseas loans. It may, however, be difficult to raise all the finance by taxation or by government borrowings, and private finance may be easier. Governments with limited finance at their disposal may be able to finance new towns from private loans to private building societies by using the finance at their disposal to insure funds against non-payment of mortgages granted. Investors, both at home and overseas, may be prepared to lend far more freely and at much lower rates of interest if the loans are guaranteed by insurance. In some cases, international funds could be better used

as guarantees for private investors funds than lent directly for development.

Particularly in countries with a shortage of capital, there is a need to encourage saving and lending at moderate rates of interest, especially for urban investment. Such saving and lending will tend to be stimulated by guarantees of security, for lack of confidence in the safety of loans is often an important reason for an unwillingness to lend. Tax privileges may also stimulate saving and lending. Equally important is the existence of suitable institutions for small investments. Further encouragement can be provided by granting privileges to investors to borrow for the purchase of houses and perhaps small business properties.

The financial requirements for new and satellite towns is no different than that required for other capital works. Loans can be backed by the security of the property created and the income it is expected to generate. This backing must tend to be less valuable for a new enterprise since there can be no existing stable revenue to act as a guarantee. Hence, loans for new towns will tend to be more expensive than normal municipal loans without some guarantee. It may be preferable for funds to be raised indirectly by borrowing from a national or international fund, or a fund so backed, rather than directly from the public. Town development finance would be looked at only as a part of general development finance. In this way, capital needs are more likely to be co-ordinated and balanced.

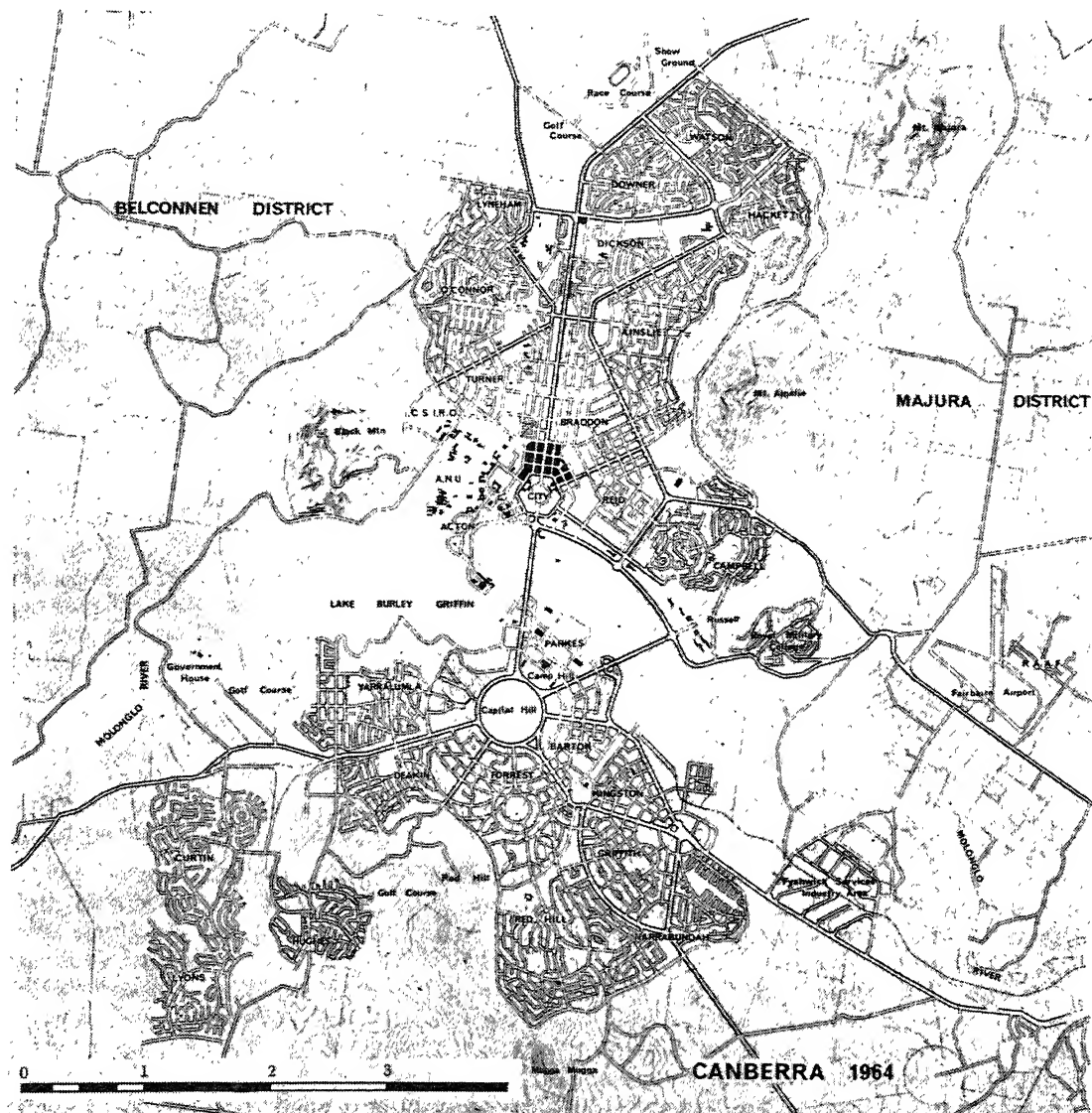
THE PLANNING OF NEW CAPITAL CITIES*

JORGE E. HARDOY

Throughout history the building of new cities has occupied the minds of rulers, colonizers and speculators. Pre-industrial societies built new cities for a great variety of reasons. The ancient Greeks used new cities to expand trade; the Romans to consolidate the increasingly

distant frontiers of their empire and to remove from the capital groups which might constitute a threat to the security of the State; the Incas to promote the settlement of new territories; the medieval kings of France and England for speculative reasons; the lords of Navarre and Barcelona to assure themselves of their subjects' support in the war against the Moors; and the Spanish Crown to assert its sovereignty and stimulate the

* Background paper No. 14 prepared for the United Nations Symposium on the Planning and Development of New Towns, Moscow, 24 August-7 September 1964.



Credit: Australian National Capital Development Commission

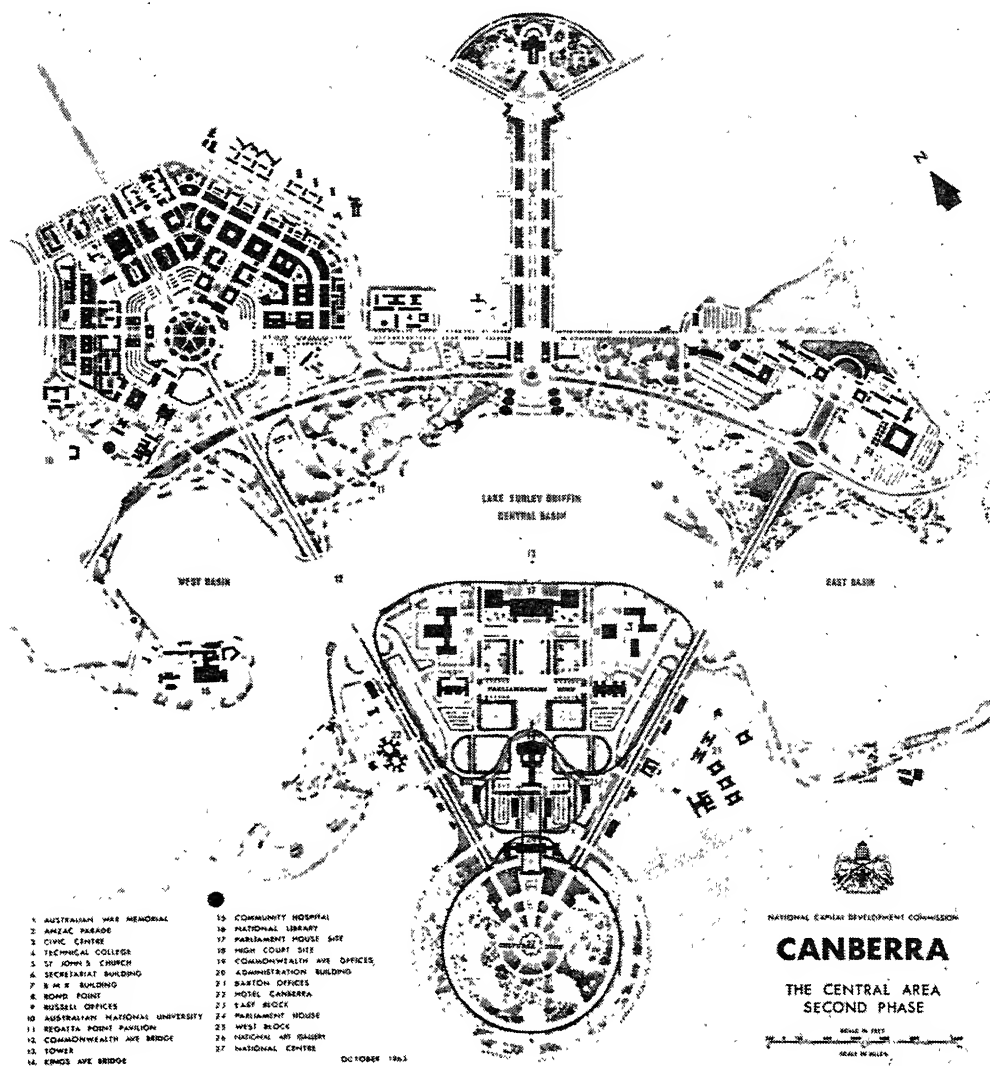
economy in the conquered territories. Often these societies carried into new territories ideas that could scarcely have been put into practice in their own cities which, owing to their greater age, congestion and subdivisions of property, were difficult to remodel.

The creation of a new capital city, however, has not always been based on such a wide range of motives. A new capital presupposes the existence of a State which backs and requires its creation. It implies the formulation of a policy and a shifting, often abruptly, of the territorial trends prevailing before its creation.

The transfer of the capitals of some States to new sites have invariably been political acts. While the creation of a new capital city has resulted in changes in the economic and demographic orientation of the territories which from then on it governed, it has also in every case had repercussions, often fundamental, on the subsequent direction of the country's development. Few centuries have witnessed so extensive and intensive

a process of urban creation as the present one. Indeed, though many of the possibilities for achieving steady progress in developing countries have yet to be fully considered, there is nevertheless, a broader, clearer and more acute awareness of the problems of development. In the development of the poorer nations and of unpopulated areas, cities will prove to be a fundamental factor for settlement and progress.

A number of national capitals have been planned and developed in the course of this century. For the most part they are in countries which, whatever their stage of development, are new, following a long colonial period. These new capitals are sometimes completely new communities, while in other cases they are existing cities to which additions have been made, but even then, the scale and the impact of the new, marks a clear departure from what went on before. For reasons of accessibility of data, this comparative study will concentrate on three cities—Canberra, the capital of Australia; Brasília, the capital of Brazil; and Islamabad, the capital of Pakistan.



Credit: Australian National Capital Development Commission

Various factors have combined to induce countries to transfer their seats of government. Australia and Brazil, and to a lesser extent Pakistan, are among the largest nations in the world, with much of their territories undeveloped. Their populations are unevenly distributed, being concentrated in all three cases along the coasts, while vast expanses of the interior remain empty. Hence the territorial consolidation of these countries was vital.

Brazil consists of two clearly differentiated regions. One of them—the coastal region—comprises regional economies and islands of population which are still almost isolated from each other. The other, much vaster region is practically unpopulated and has an enormous reserve of unexploited resources. The idea of moving the Brazilian capital inland is far from new; even before Rio de Janeiro became the second capital of the Portuguese empire in America, some men who were looking ahead to independence had thought of establishing the capital in the interior of the country. Bahia had lost its place as the capital of Brazil in the late eighteenth century when sugar-cane production, concentrated in the northeast, was supplanted by diamond mining, which speedily became the principal source of wealth. Rio de Janeiro became the chief outlet for the new wealth and the chief point of entry for the mining operation.

In 1793, Rio de Janeiro became the new capital of a Brazil which at that time extended along the coast but had not yet ventured into its own rich and unexplored interior. In 1822, José Bonifacio, the moving force behind the establishment of a constitutional monarchy in Brazil, proposed that the capital be moved inland to a site which had the advantage of being close to the three great river systems of Brazil—the Amazon, the Plata-Paraná, and the São Francisco. In 1889 the national Government reserved an area of 10,000 square kilometres for the Federal District, and in 1892 a special commission demarcated its boundaries. In 1946 the new Constitution proclaimed the necessity of transferring the capital to the central highlands, and in 1960 the national Government was installed in a new city speedily planned and built in the same general area considered in 1889.

The idea of Brasília is based on sound political reasons of a nation threatened by regional pressures which made administrative action increasingly difficult. Moreover, Rio de Janeiro, a city of great personality and charm, was not the place for dynamic and sustained governmental action. Apart from the great urban problems which made movement within the city difficult, there was a traditional outlook on the part of its people, intimately derived from the setting in which the life of the city went on. A new material and spiritual climate was one of the objectives of the country's leaders when they decided in 1956 that the capital should be moved inland within four years.

The capital of Brazil was moved inland also to settle and develop new territories which would be gradually integrated with areas already in the process of development and would stimulate the country's growth. Brasília

will thus become a force promoting the more equitable distribution of the nation's wealth.

From many standpoints, Brasília has become a symbol. It was presented to and accepted by the people as a symbol in a country in urgent need of uniting its scattered forces and setting a goal which would capture the imagination of the people. Holford has rightly called it an act of political faith, and one offering immense prospects.

Brasília was neither a case of reconciling the interests of rival cities, as was Canberra or Ottawa, nor of seeking to unify regions with opposing interests, as was Washington.¹ Brasília was presented as the symbol of a country which had to show the world its potentialities and its future course.

When the six Australian states decided to federate in 1900, they had to decide upon the construction of a new capital to serve as the seat of Government of the new Commonwealth of Australia. From the beginning, Canberra was designed to become "a symbol, a rallying point and a matter of national pride. Canberra, as the seat of Government, must represent the federation of the States and reflect what Australia stands for as a nation."²

Economic and social pressures in Australia at the beginning of the twentieth century were not so compelling as in Brazil or Pakistan fifty years later, but it was nevertheless essential to endow a young and vigorous nation with an idea capable of uniting a people then living in scattered regions. Canberra was planned as a single centre to concentrate and co-ordinate the efforts previously channelled through the six capital cities. From their foundations, the industrial and commercial development of all the colonies had been concentrated in their respective capitals. Even today, with greater economic maturity, 54 per cent of the total population of the country in 1954 lived in those six cities.

However, during its first fifty years, Canberra fell far short of achieving the purposes for which it was intended. When proclaimed the capital in 1912, it was a small village. Construction began in 1913, but it was not really until 1946, and particularly after 1958, that Canberra began to acquire the features of a true city. Canberra was planned to be the seat of Parliament, of the central departments, and of public and private institutions. Canberra will also accommodate the Australian National University, National Library, Academy of Sciences and other scientific institutions. In recent years Canberra has secured genuine acceptance as the capital of Australia and as the symbol of the federation of the six former colonies founded by the British.

Shortly after obtaining independence in 1947, Pakistan, a nation composed of two geographically separated regions, vitally needed a new capital. This was not only

¹ Government of Brazil, Ministry of Foreign Affairs, Cultural Division, "Brazil builds Brasília", by J. O. de Menna Penna, in *Brasília* (May 1960).

² Government of Australia, The National Capital Development Commission, "Canberra development, 1962-1967" (Canberra, 1962).

because the country had no city in which the administrative and cultural functions proper to the seat of a national government could be concentrated, but also because of the need to create a symbol of its newly acquired independence.³

The objectives pursued by the Government of Pakistan in establishing a new capital are both long-term and short-term.⁴ In the long run, Islamabad (the City of Islam) is intended to become a symbol for the entire nation, to alleviate the existing congestion in Karachi and facilitate the development of that city as Pakistan's main industrial and economic centre, and to create a model city serving as an example for the renewal of existing cities and for the creation of new cities. In the short term, Islamabad will become the centre for many administrative activities now dispersed throughout the country, with resulting gains in efficiency. The National Cultural Centre and the National University will also be established there. Within a few years Islamabad will no doubt become the principal industrial centre in northern Pakistan, sharing with Rawalpindi, its twin city, the various services needed by a large metropolitan area.⁵

The capital was temporarily established in Karachi, the only city in Pakistan whose location and communications were adapted to urgent administrative requirements. Karachi's destiny, however, is that of a large industrial and economic centre, for its physical features, its remoteness from the centre, its climate and its traditions in no way qualify it to serve as the principal administrative and cultural centre of the country. The creation of a new capital was amply justified, and early 1959 saw the first meeting of a special commission appointed by the President of Pakistan to carry the idea forward.

Other nations which have become independent in recent decades have had to select their new capitals. In India the choice was limited, and Delhi had many advantages owing to its situation midway between Bengal and the western frontier, its position as the main transport centre in northern India, and its geographical location. As early as 1206, Delhi had been the capital of the first Muslim empire established in India, and although in the middle of the sixteenth century the Government was moved to Agra as a result of the Mogul conquests, Delhi, despite its decline, maintained such prestige that it was later again chosen by the conquerors as their capital. Mogul power in India was finally broken when Delhi was taken by British forces in 1858. In 1911, King George V restored Delhi to its place as the capital of India. That decision was taken for primarily political reasons—the British wanted to detach themselves from the nationalist movement in Bengal and to gain the support of the warrior groups of northern India.

³ Doxiadis Associates, "The spirit of Islamabad", *Ekistics* (Athens), vol. XII, No. 73 (November, 1961), p. 315.

⁴ *Ibid.*

⁵ Doxiadis Associates, "Islamabad: the scale of the city and its central area", *Ekistics* (Athens), vol. XIV, No. 83 (October 1962), p. 148.

Ankara is another example of a new national capital established in the twentieth century in an age-old city. The decision to transfer the Turkish capital from Constantinople to the interior of the country was prompted by reasons very similar to those underlying the transfer of the Brazilian capital, the object being to create a new seat of government having national significance away from the traditional pressures which made it possible for a nation striving for modernization to achieve balanced development.

An example at the provincial level is Chandigarh, the new capital of the Punjab, a province in northwestern India. As a result of the partition of India and Pakistan, Lahore, the former capital of Punjab, became part of Pakistan. The government of the Punjab was temporarily transferred to the city of Simla, but in 1953 the government offices began to move to the new city, 266 kilometres north-west of Delhi and 1,806 kilometres north of Bombay.

THE SITES OF NEW CAPITAL CITIES

When those responsible were selecting the areas for the three national capitals, they looked for relatively isolated regions of their countries. There were geopolitical, but also practical, reasons for choosing such sites.

Brasília is an extreme example of this. Although in the neighbourhood of the site where Brasília now stands there was a small town called Planaltina and a village called Braslandia, neither was of any importance. The region was sparsely populated and commercially dependent on São Paulo, 890 kilometres south.⁶

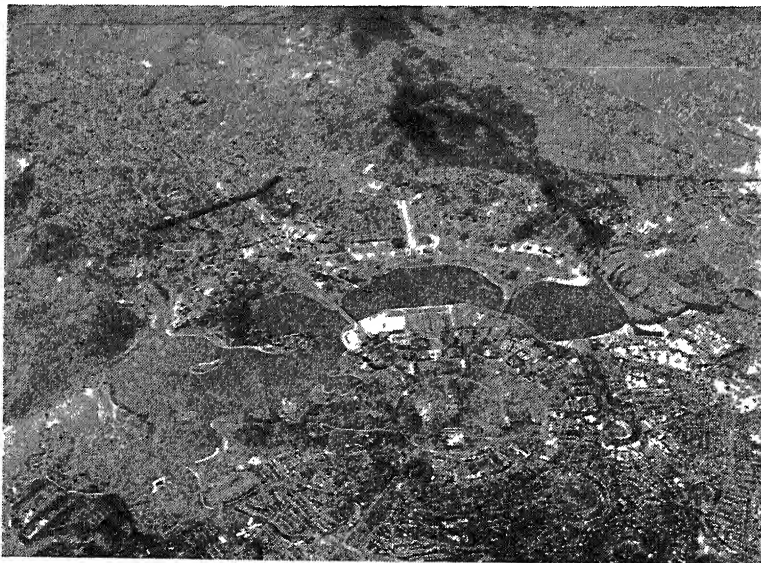
The only town of any size near the Federal District was Goiânia, planned in 1932 as the capital of the State of Goiás and situated 125 kilometres south-west of the site of Brasília. This meant that the labour and resources used in the construction of Brasília had to be imported and the necessary communication systems had to be constructed.

The climate at Brasília is mild, with no extremes of temperature, being 1,100 metres above sea level. The area is arid, but livestock can be raised there. The terrain is gently undulating. The subsoil presents some problems for economic construction of foundations and the soil, of a beautiful red colour, is "an obstacle to landscaping and to planting in general".⁷

The favourable impetus Goiânia gave to the development of the south-western part of Goiás State is undoubtedly a positive example of the influence an urban centre can have on a sparsely populated region with unexploited resources. The site of Brasília, however, is far from immediate sources of supply and although agricultural development in the central highlands may be possible with modern methods it would require heavy capital

⁶ Preston E. James and Peridiao Faissol, "The problem of Brazil's capital city" *Geographical Review* (New York), vol. XLVI, No. 3 (July 1956), p. 301.

⁷ Jorge Wilhelm, "Brasília, 1960 — Uma interpretação", *Brasília*, uma publicação Acropole, 2a. edição, 1960.



Canberra, Australia

Credit: Australian News and Information Bureau



Canberra, Australia

Government Triangle, shown from the oval which is to be the cultural zone

Credit: Australian News and Information Bureau

Canberra, Australia

Lake Burley Griffin. Completed in 1964 after 50 years of planning, the lake is now the dominating physical entity within the city

Credit: Australian News and Information Bureau

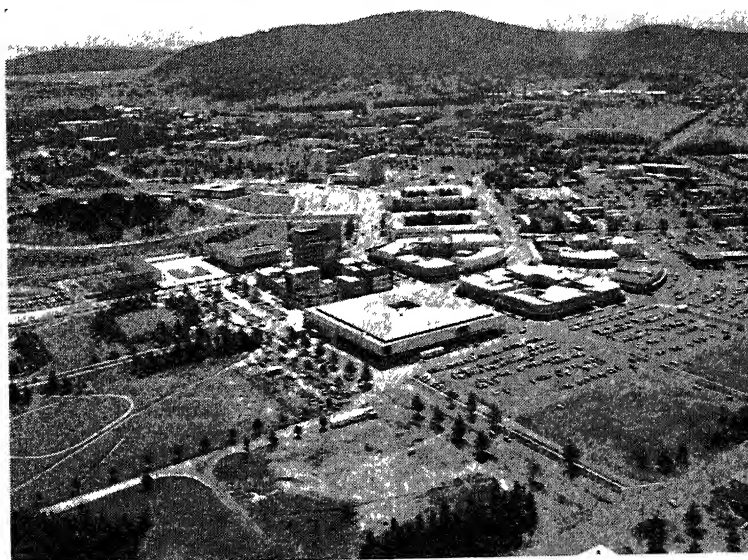




Canberra, Australia

Civic Centre. The main activity centre of the city, it includes administrative, commercial, residential and light industrial activities

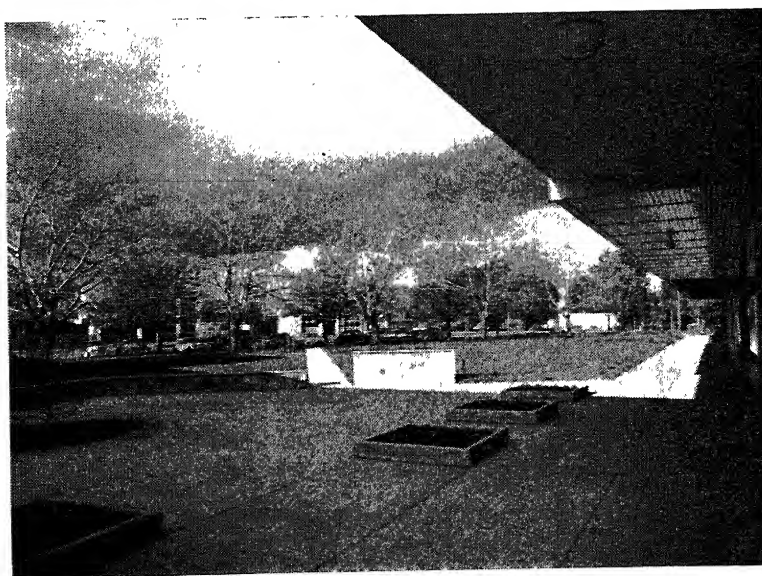
Credit: Australian News and Information Bureau



Canberra, Australia

Civic Centre. Photo reveals the openness characteristic of Canberra

Credit: Australian News and Information Bureau



Canberra, Australia

Kingston Shopping Centre. Again, the stress on open space prevails

Credit: Australian News and Information Bureau

investment. Within the Federal District, there are forested areas where farms, including dairy farms, might be established; but even then much of the food will have to come from farther away. The advantages of the site at Brasília, apart from the impetus to development and the good climate, are the hydro-electric potential, the availability of some building materials and, of course, the low cost of land.

Islamabad is situated in the north central part of West Pakistan on the old highway linking the Middle East with India by way of Teheran, Kabul, the Khyber Pass, Lahore and Delhi. The site of Islamabad is between Kabul, Afghanistan, and Lahore, the second city of Pakistan (864,000 population in 1955).

The planning of Islamabad presented certain features which distinguish it from Brasília. The area already had a suitable network of communities and a considerable urban population.

The district, an irregular trapezoid of some 2,800 square kilometres, includes Rawalpindi, with 167,000 inhabitants in 1955, the ninth largest city in Pakistan. Islamabad will grow up alongside Rawalpindi, using the railway, roads and airport which serve that city and the existing labour force and services. Within a radius of 60 kilometres of Rawalpindi there are other smaller cities, such as Murree, Kahuta, Fatehjang, Haripur and Abbottabad, and many villages. The concentration of rural population in villages is very characteristic of West Pakistan; in 1951, 86 per cent of the 34 million inhabitants of this part of the country lived in villages.⁸ Urbanization has greatly accelerated since independence, partly because of partition from India.

The capital district is separated from the River Indus by a chain of hills, but the distance is only about 50 kilometres as the crow flies. Almost all of West Pakistan is arid. Rainfall increases towards the north, as one approaches the Himalayas. Annual rainfalls of more than 700 mm are recorded a few kilometres north-east of Rawalpindi, and 1,270 mm at the Murree station, which is still in the capital district.⁹ In addition, most of the hydroelectric development projects completed or planned since partition are in the north of the country, on the Kahul and Jhelum rivers and other smaller tributaries of the Indus.¹⁰

Thus, the Capital District of Islamabad is located in one of the most favourable regions of West Pakistan, according to ecology, existing infrastructure and potentialities. The site where the city will stand is bound on the north by a range of hills, the Margalas, and on the southeast by the Soan and Ling rivers. The land slopes down from north-east to south-west through valleys formed by a range of hills. The River Jhelum forms part of the Capital District's boundary on the east.

⁸ United Nations, *Demographic Yearbook, 1955* (Sales No.: 55.XIII.6).

⁹ United Nations, *Multiple-Purpose River Basin Development*, part 2B (Sales No.: 56.II.F.8), figure 34, pp. 78-83.

¹⁰ *Ibid.*, figure 42.

In Australia the first colony founded by the British was New South Wales, in 1788. That territory has always been the most populous, and Sydney was always the largest urban centre. Another colony was Victoria, established on the south coast, which acquired separate status in 1851. Melbourne, its capital, became the country's second city. The two states comprise two-thirds of the population of Australia. When the Commonwealth of Australia came into being on 1 January 1901 and a new federal capital was approved, Brisbane and Adelaide were the next largest cities to Sydney and Melbourne, thus adding further to the concentration of the population in the south-eastern part of Australia. In Western Australia there was the colony of Perth, which could not compete with the others. As various attempts to settle the northern territory failed, major development was practically limited to the south-east. The choice of a site for the new capital was dictated by the situation existing at that time, by Australia's failure to expand territorially, and also by the absence of any clear idea of the long-term direction of national development. Australia of 1900 meant the south-east. It was obvious that the rivalry between Sydney and Melbourne would lead to the choice of a neutral site. It was not until the First World War that the former colonies, which had maintained regional attitudes devoid of national feeling, were effectively unified.

Melbourne continued as the capital of the Commonwealth for many years because the development of Canberra began tardily and proceeded slowly. Not until 1927 did the federal Government start to move to the new capital.

The Australian capital territory, formerly in the State of New South Wales, lies some 200 kilometres south-west of Sydney and 450 kilometres from Melbourne. Approximately 600 metres above sea level, Canberra is surrounded by low mountains, which rise some hundreds of metres above the level of the city. The site is traversed by the valley of the River Molonglo, which has been converted into Lake Burley Griffin in the vicinity of Canberra, about 700 hectares in area.

ANTICIPATED POPULATION AND STAGES OF GROWTH

Canberra's population increased very slowly because the federal Government never fully transferred its administration to the new capital. This situation continued until 1958, when the city, thirty years after the influx of population had begun, had only 41,167 inhabitants. In rather less than five years, however, Canberra became the largest inland city in Australia, with an average annual growth rate of 12 per cent between 1960 and 1962. By that date the population had grown to 63,000 and is expected to reach 100,000 by 1969.¹¹

Brasília has grown much faster, the population reaching approximately 75,400 by the end of 1961. In addition, some 20,200 persons were living in the

¹¹ Government of Australia, The National Capital Development Commission. "Canberra Development, 1962-1967", op. cit.

suburbs and 19,000 in the immediately adjacent rural area. To these must be added 15,200 residents of the *Núcleo Bandeirante* or *Cidade Livre*, one of the "satellites" of Brasília.¹² Three other spontaneous satellite towns, without even essential services—Tagnatinga, Gama and Sobradinho—contained another 66,000 persons. Evidently the urban fringes and four satellites are growing much faster than Brasília itself.

In 1951 the population of Rawalpindi and its metropolitan area was 153,000; it had increased to 167,000 by 1955.¹³ Islamabad has been planned for a population of 2.5 million. It is envisaged as having 7,200 families, or 36,000 persons, five years after the commencement of construction, and 136,000 at the end of ten years. Later, with an annual growth rate of 11.4 per cent the city will reach 400,000 inhabitants by the twentieth year.

POPULATION AND THE WORK FORCE

The three cities under study must encourage migration of personnel from other areas and cities to perform construction work, and later the administrative and service tasks which will be concentrated in the three capitals.

"In Canberra the basic industry is the central office function of the public service, 'exporting' its services to the rest of Australia. The growth of this sector of the work force has provided the impetus to the city's economy, although in recent years new factors affecting growth have emerged. These arise from the fact that non-governmental 'export' services are now being established. They include: firstly, services such as higher education, research and tourism, which have a national sphere of influence; and, secondly, retail trade, professional and other services which, although catering primarily for the local market, also serve the surrounding region."¹⁴

The planners of Canberra hope that a smaller percentage of the population will be employed in administrative and public services in the future. Nevertheless, the civil service and construction will predominate for some time to come; construction accounts for 16 per cent of the manpower employed in the city, as against 9 per cent for Australia as a whole. As the city grows the share of the professions and of industry is likely to rise. The outline development plan for Canberra in February, 1962 provided for three industrial areas, one in the extreme north and two larger ones in the south-east corner, near the eastern end of the lake, covering a total area of about 260 hectares.

The case of Islamabad is very different. Its planners consider that the number of employees needed by the civil service five years after start of construction will

be 9,000, while the anticipated increase in population would be 7,200 families or 36,000 persons. An unspecified number of construction workers should be added to this figure. These additional employees will have to come from the existing population of Rawalpindi. By the twentieth year, with an anticipated 400,000 persons or 80,000 families, there would be 27,000 public employees.

The master plan for the Islamabad-Rawalpindi metropolitan area provides for a military zone with an adjacent residential area of some 2,000 hectares, two industrial areas covering a total of 1,000 hectares, and two zones for warehousing and related activities of 350 hectares. In addition, all residential communities include large areas set aside for light industries and craft industries, totalling perhaps 1,500-1,800 hectares. Islamabad, excluding Rawalpindi, the airport and the large national park to the east of the city, is about 25,000 hectares in area. But if the three planning districts of the metropolitan area—Islamabad proper, Rawalpindi and the national park—were included, it would amount to 64,000 hectares. There can be no doubt that Islamabad, because of its situation in northern Pakistan, is destined to become a great regional centre for industry as well as for services. It is natural, because of Pakistan's economy, that there should be considerable sections occupied by craftsmen. Finally, the strategic importance is indicated by the size of the military zone.

The anticipated population of Brasília seems to be still somewhat undefined, and the number of inhabitants was not among the specifications in the competition for a plan. The competitors therefore assumed different figures, and variations were considerable. In the memorandum which Costa submitted with his plan, there was no reference to population, although it was later fixed at 700,000. An official publication of the Ministry of Foreign Affairs says, in referring to the city's water consumption: "When the capital reaches its planned final population of half a million..."¹⁵ The Roberto Brothers' plan, which won third prize, envisaged a population of 630,000, which could be increased to 1.2 million. The plan of J. V. Artigas and others, which won fifth prize, was based on a population of 550,000.¹⁶ No indication of the stages of growth were found. However, initial development saw considerable migration to Brasília from the impoverished regions of Brazil, foretelling massive growth.

THE ECONOMIC BASE

It is surprising how little importance the planners of the three cities attributed to the economies of the new capitals and of their areas of influence. Of course, the civil service will account for a large proportion of the work force and for a long time the building industry will be important. But there seems to be no clear idea of the implications, for potential markets, of establishing

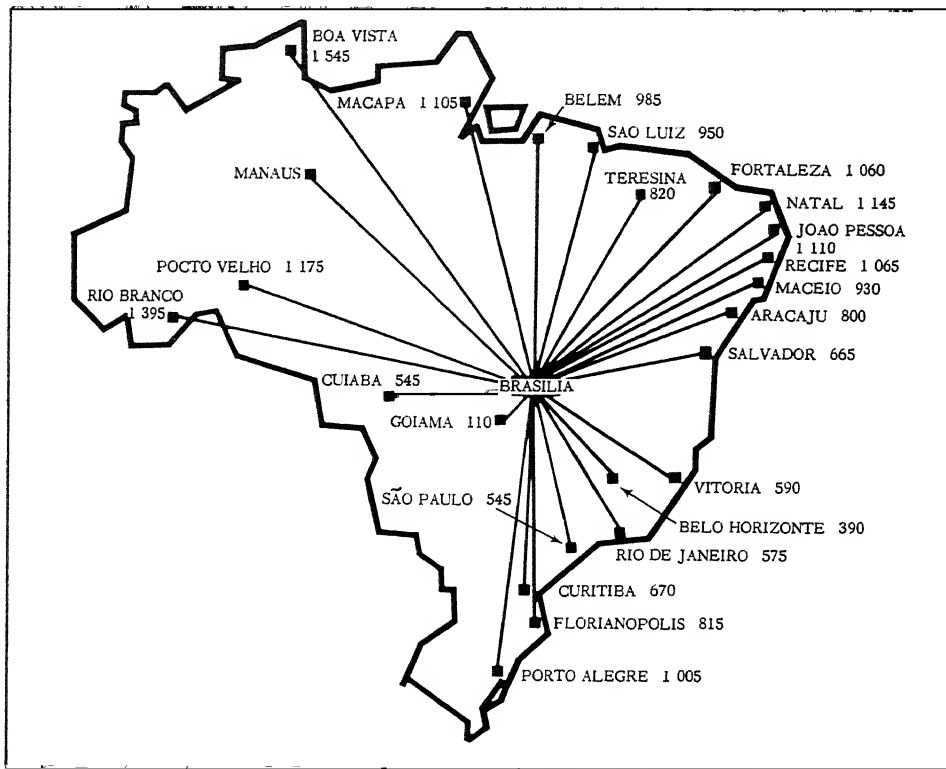
¹² David Crease, "Progress in Brasília", *Architectural Review* (Surrey, England), April, 1962.

¹³ Universidad de California, Instituto de Estudios Internacionales, *Las Areas Metropolitanas del Mundo* (Mexico City, 1961).

¹⁴ Government of Australia, The National Capital Development Commission, op. cit.

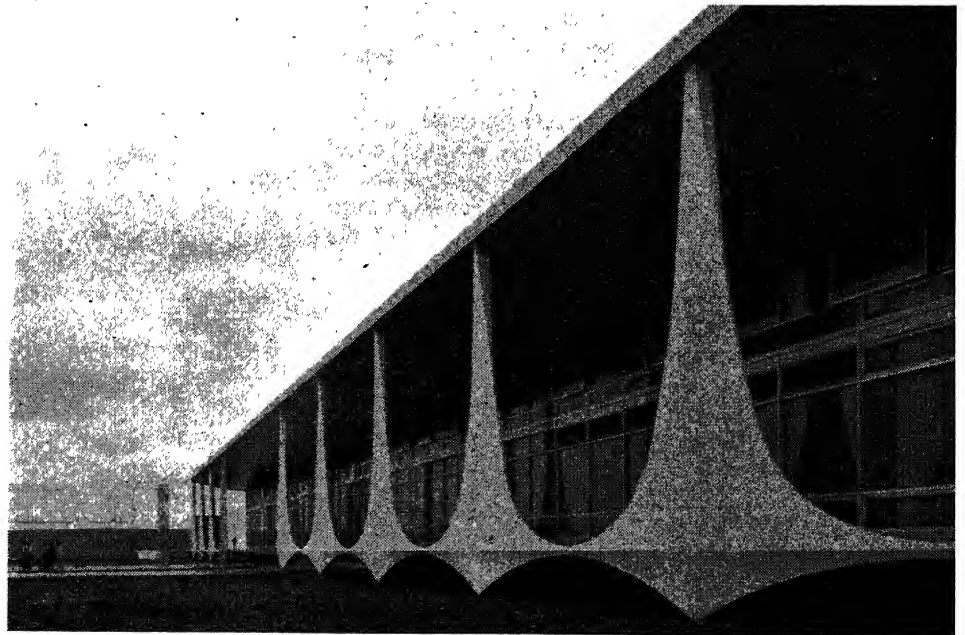
¹⁵ Government of Brazil, Ministry of Foreign Affairs, Cultural Division, *Brasília*, op. cit.

¹⁶ Jorge Wilhelm, op. cit.

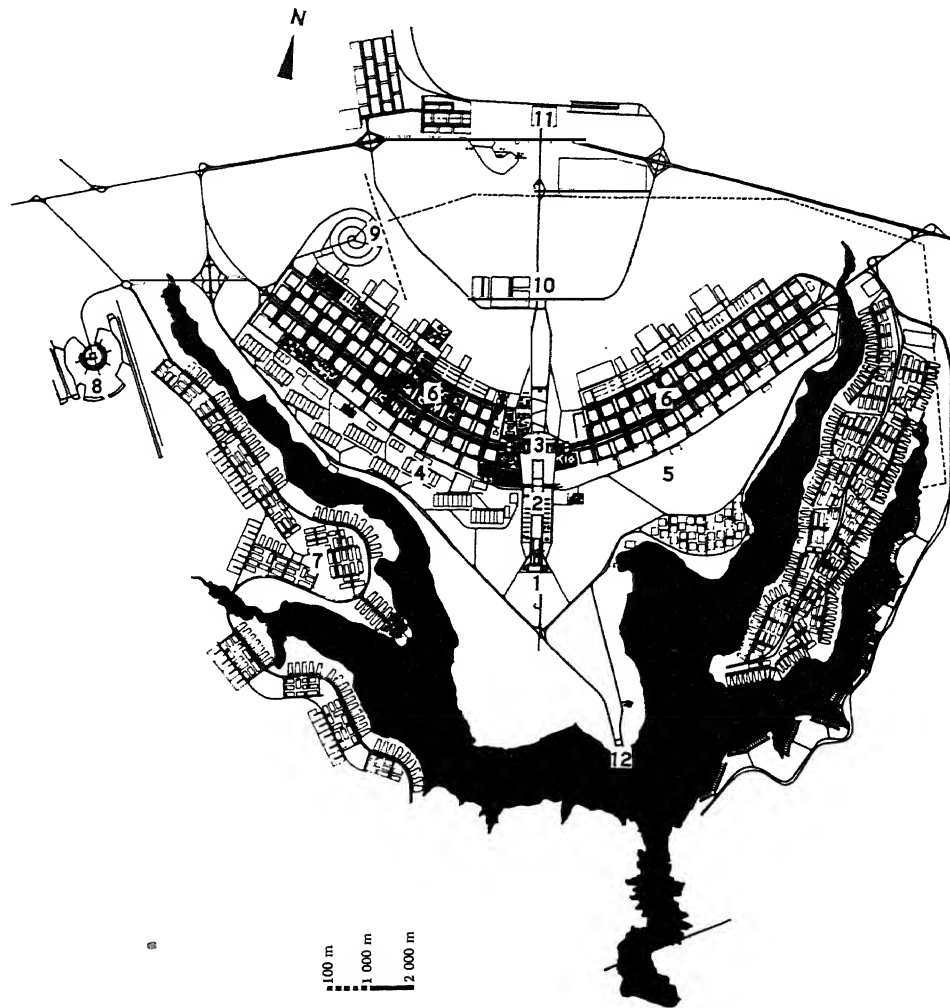


Brasília location

The map amply illustrates the importance of Brasília in giving an economic, political and social importance to the whole geography of Brazil (distances in miles from Brasília to the principal cities)



Presidential Palace



Brasilia

KEY: 1: Plaza of Three Powers; 2: ministries; 3: bus station; 4: embassies; 5: university; 6: residential zone (housing unities); 7: residential zone (individual houses); 8: airport; 9: cemetery; 10: municipal square; 11: railway station; 12: presidential residence

The basic form of the Brasilia plan derives from "that elemental gesture everyone makes when marking a place or taking possession of it". It places the major entities and institutions into a composition of separate and distinct elements and ties them together by great thoroughfares



Ministerial buildings

major cities in areas not formerly urbanized, or of what this may mean as an attraction to manufacturers. The writer has seen no studies, for any of the three cities, concerned with freight costs, distances, or the perhaps temporary lack of skilled labour as limiting factors for certain industries.

In Canberra, some industrial areas were marked out, but very little serious effort has thus far been made to attract industry. The Capital Development Commission considers that the time has come to encourage "selected industries in order to establish a wider range of employment opportunities and to help diversify the social and economic structure of the community", but the Commission's report is doubtful when it says that the range of manufacturing activities may widen during the period 1962-1967.¹⁷ Canberra will no doubt gradually become a banking centre which will also attract the regional offices of insurance and financial companies, and it is hoped that the consumer market which the city will represent in the future will also stimulate the development of such smaller centres as Goulburn, Cooma, Queanbeyan and Young; but it is difficult to ascertain how large a part non-governmental activities can or should play in the regional and urban economies.

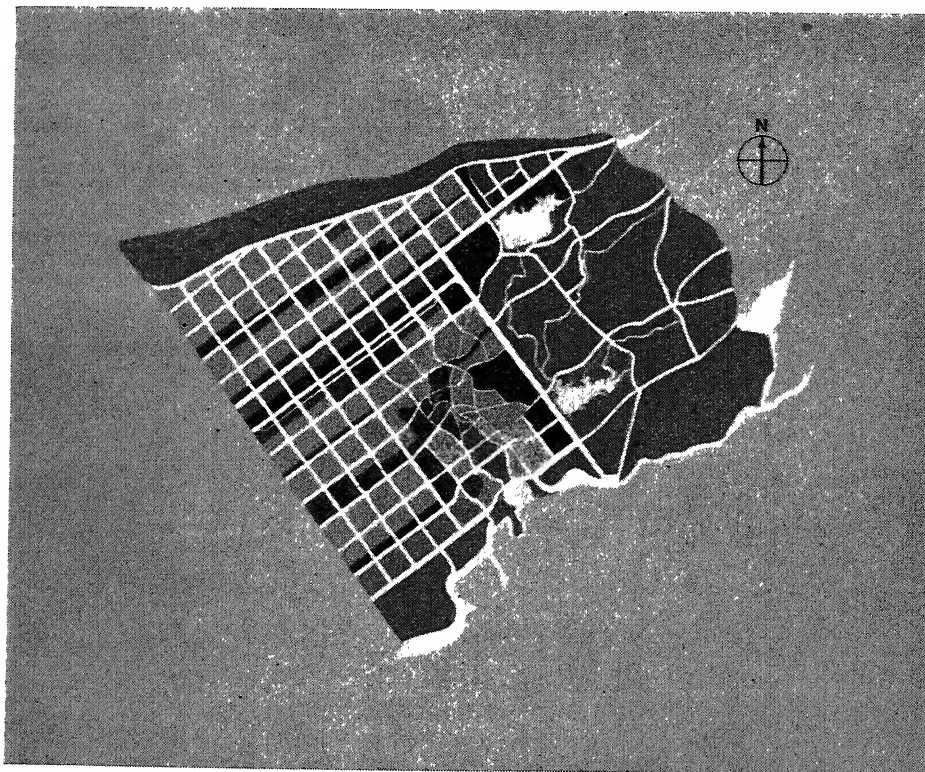
The situation is even more uncertain in Brasília. The plan and memorandum submitted by Costa did not provide for an industrial zone. But two central marketing and warehousing areas were set aside, one in the extreme

north of the east-west axis of the city, near the railway station, and the other in the northwest corner. It is obvious, therefore, that under Costa's plan the civil service and construction were to be the main sources of employment on the short term, and the civil service, cultural and banking activities and commerce in the long term. Even in the Robertos' plan, which was undeniably more rational than Costa's, the authors, when specifying the types of families, did not expressly provide for industrial workers, unless these were included among the 15.5 per cent referred to as independent workers. According to the Robertos, 47 per cent would be employed in business and services, 30.3 per cent in the civil service, and 6.5 per cent in construction.

Of the three cities, it is in Islamabad that the need for a more diversified economic base was most clearly appreciated. The planners gave attention to industrial development,¹⁸ specifying the form of applications for industrial sites to the Capital Development Authority, the size of sites (from 2,000 square metres to forty hectares), and the manner in which the city's industrialization was to proceed. The first establishments are to serve the construction-materials and consumer-goods industries, together with craft industries. Industrial development will have to conform to the development of the city and will not be left to the whim of private enterprises. Continuous evaluation of investments is also recommended.

¹⁷ Government of Australia, the National Capital Development Commission, op. cit.

¹⁸ Doxiadis Associates, "Industrial development in Islamabad", *Ekistics* (Athens), vol. XIII, No. 79 (May 1962).



Credit: Doxiadis Associates

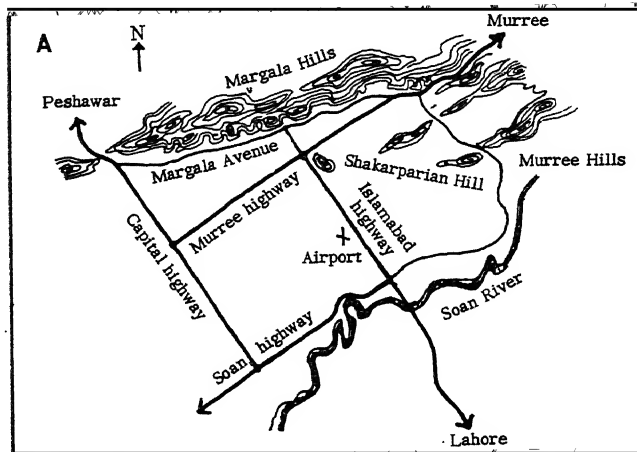
The industrial areas are dispersed throughout the city, although the principal ones are in the south, near Rawalpindi; light industry is linked with the residential areas north of Murree Avenue. Thus Islamabad will likely become the main administrative and cultural centre of the nation, but it is also planned to assume the status of northern Pakistan's main commercial centre, a military centre, a transport and an important industrial city.

Industrial development of new capital cities has always been very slow. In Chandigarh, following a new emphasis on industry, recent efforts have successfully attracted a number of industrial enterprises, such as a bicycle factory, an antibiotics factory, a German weaving-needle factory, a pipe-making company, and so on. It will be seen that these are industries of a very diverse nature, which would seem to create a base for attracting other industrial activities.

The conception of the Master Plan

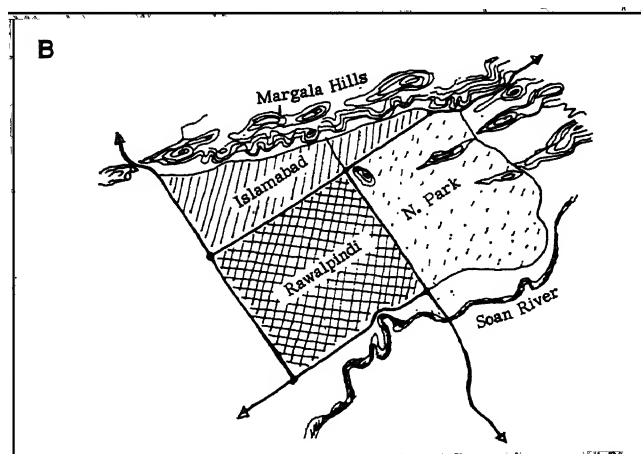
The landscape pattern and the highways

The backbone of the Islamabad Metropolitan Area Master Plan is formed by two highways, Islamabad Highway and Murree Highway, the alignment of which was dictated by the natural landscape pattern and the existing man-made obstacles. The landscape's chief characteristic is that it runs from north-east to south-west along valleys formed by a series of hills running in the same direction. Two more highways, by-passing the existing town of Rawalpindi, have been proposed. Thus, a system of four highways becomes the basic system of axes for the metropolitan area. These axes form a big square, which will define all future transportation systems and all major functions within the metropolitan area



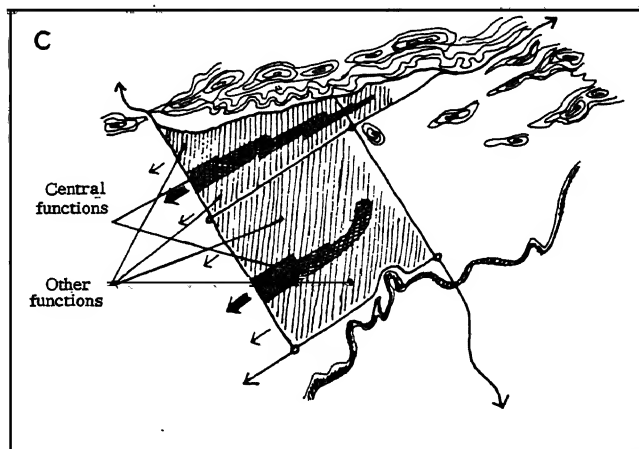
Formation of the metropolitan area

Islamabad is composed of three distinct areas: (a) Islamabad proper; (b) Rawalpindi; (c) The National Park area where sites must be provided for a national sports centre, the national university, national research institute, etc. The areas of Islamabad proper and Rawalpindi are both open for expansion towards the south-west

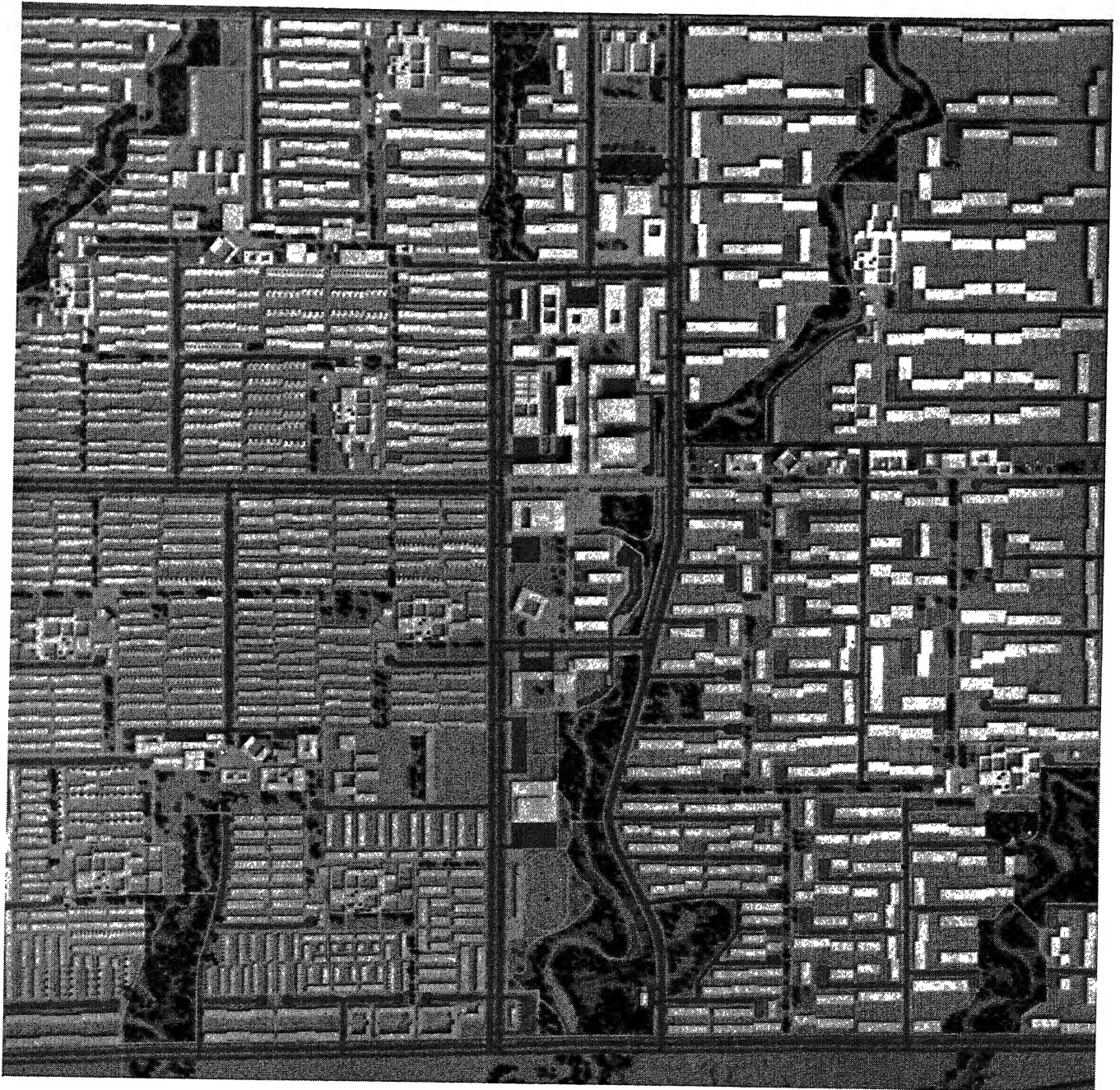


Twin cities

The cities of Islamabad and Rawalpindi will develop as twin cities serving each other in complementary ways. Islamabad will be the capital of the nation and will serve mainly administrative and cultural functions. Rawalpindi will remain the regional centre serving industrial and commercial functions. The Master Plan allows for future expansions of their centres



Credit: Doxiadis Associates



Class IV community in Islamabad

Credit: Doxiadis Associates

Smaller communities compose larger ones in accordance with the hierarchy of functions necessary in the living areas

LAYOUT OF THE CITY

The Griffin plan for Canberra represents a combination of two of the concepts of urban beauty in vogue at the beginning of the century. It takes the site into account and provides for landscaping in the surrounding suburbs, for the low density characteristic of garden cities, and for axiality, even in small sectors, and it seeks to create vistas and a certain monumentality, all features from the baroque period carried well into the twentieth century. In addition, there are a number of partial concentric schemes clearly showing Renaissance influence.

The central monumental north-south axis of the city is formed by Northbourne and Commonwealth Avenues. At a thirty-degree angle to this line is another axis representing the second side of a triangle, the base being formed by the lake. On the extension of this axis, on the far shore of the lake and at a distance of 3,800 metres, is the war memorial. The third side of the triangle is formed by King Avenue.

The remainder of the plan of Canberra functions independently and is not a part of this great design, either in layout or in spirit. Owing to its urban layout Canberra is in its present form a model of the nineteenth rather than the twentieth century. The reforms in the road system suggested by Holford¹⁹ and those introduced by the National Capital Development Commission may adapt the layout to modern traffic, but the image of Canberra falls short of what might be expected of a capital city in the twentieth century.

Until a few years ago, when so little had been built, the Canberra plan could have been brought drastically up to date and placed on a sounder basis than the uncertain science of town planning at the beginning of the century allowed. Canberra today is not a city for the motor-car, and it will probably never be one for the pedestrian. Thus far, Canberra has been growing with a very low population density, and this makes it appear even more a suburb than a city. The long distances and the resulting difficulty in providing basic community services have often been criticized.

Costa explained how his plan for Brasília originated: it grew out of that elemental gesture everyone makes when marking a place or taking possession of it: two straight lines intersecting at right angles in the sign of the cross. In his view, Brasília was not to be conceived as a mere organic entity capable of functioning effortlessly and vitally like any other modern city; not merely as an *urbs* of brick and mortar, therefore, but as a *civitas*, with the special qualities and functions of a true capital city. To achieve that objective, the city planner must have a certain dignity and nobility of purpose, because that underlying attitude would create the feeling of order, fitness and proportion which would make his city truly monumental.²⁰

¹⁹ William Holford, "The future of Canberra", *The Town Planning Review* (Liverpool), vol. XXIX, No. 3 (October 1958), p. 139.

²⁰ Government of Brazil, Ministry of Foreign Affairs, Cultural Division, "Pilot plan for Brasília", by Lucio Costa, in *Brasília*, op. cit.

In Costa's mind, Brasília should be the cause rather than the result of the development of a region. On paper, the layout of the city has great elegance, but functionally it leads to an arrangement which, while it is certainly orderly, is also very inflexible. The simple pattern of the city—a great east-west axis and a transverse north-south axis slightly curved to coincide with the natural approach to the city—has become a symbol of Brasília, just as the new capital was to be a symbol of the new Brazil.

The layout of the city is centred upon the east-west axis, nine kilometres in length. Aligned in gigantic sequence are the railway station, the municipal centre, a group of hotels and communications buildings, the recreation centre and the bus station—the site of the intersection with the transverse axis—then a cultural section, the various ministries flanking the axis on both sides, and finally the Praça dos Tres Poderes, a sculptural complex consisting of the buildings occupied by the executive, legislative and judicial branches of the Brazilian Government. The model was laid out in this way to accommodate the architecture of Niemeyer, whose intentions are reflected in his writings. Nothing interested him so much at the time as compact, simple and geometric solutions, and the problems of architectural hierarchy and order. And his solutions revolve about three architectural problems for which Brasília provides space: the isolated building, like Government House; the monumental building, in which form reflects function, like the Palace of Congress; and the comprehensive solution, like the Praça dos Tres Poderes, in which the desired unity and harmony are determined by a structural element which serves as a common denominator.²¹

The residential areas, consisting of individual dwellings or great blocks of flats, were laid out on either side of the transverse axis and are served by two parallel main streets and many cross-streets. The present centre of the city has developed at the intersection of the two axes.

Monumentality and symbolism having been achieved, the next item is surface traffic. Because of locations of the origin and destination of most traffic, the plan shows a marked concentration of flow along the main axes.

Thus the urban elements of Brasília are designed to enhance the plastic beauty of the architecture. The great east-west axis, the Praça dos Tres Poderes and the terraces are on such a scale as to provide a frame to view the architecture from a distance and in the desired perspective. However, the citizen of Brasília is absent from these urban elements, and their vastness and coldness may discourage him from spontaneously using them.

The planning of Islamabad, as compared with Brasília, introduces two innovations which are essentially physical and socio-economic, in addition to the differences of cultures. First, the scale of the city is much greater, and the population is expected to be about four times that

²¹ Oscar Niemeyer, "Testimonio", in *ibid.*

anticipated for Brasília. Second, Islamabad will have much greater diversity than Brasília. Moreover, there will be another city of considerable size within the boundaries of its metropolitan area. The existence of a local concentration of 150,000 or more inhabitants will help to solve such problems as supply, manpower and services during the first stages of construction.

There is a suitable relation between the urban layout and the main regional communication lines. Indeed, the true centre of the metropolis is the transportation hub. The care taken to plan the communities in great detail and the respect shown for certain aspects of the people's ways of life, the local materials used and the local climate cannot obscure the fact that Islamabad will depend on the motor-car for its movement.

The general flatness is oppressive. The only high construction is in the administrative sector which, being away from the metropolitan centre, has a life of its own, isolated from the city's other activities. Islamabad attempts to find what will be a new urban scale for Pakistan, and will undoubtedly influence the country's new urban developments.

THE RESIDENTIAL AREAS

Both at Brasília and at Islamabad, the residential areas consist of large blocks which spread along the main avenues. In Brasília they are called *superquadras*, and there will be eighty-six of them, each designed by different architects. Each *superquadra* measures 200 × 280 metres, or 5.6 hectares, and will accommodate up to 3,000 persons at a maximum density of 533 persons per hectare. Every *superquadra* will have an eight-classroom school and a four-room kindergarten, and between eight and eleven residential structures with eight flats to a floor, six-storeys high and built on piles.

Four *superquadras* constitute a neighbourhood unit measuring 960 × 720 metres with a maximum population of 12,000 persons. It will have a garden school providing an integrated education supplementing that given in the four primary schools, and also a cinema, clubs, shops and clinics. Shops catering to everyday needs and some specialized shops will be located along the service roads.²²

The planning of the metropolitan sector of Islamabad is based on a scale of five types of communities in descending order of size and population. The total area will be subdivided into class V communities, with between 20,000 and 40,000 inhabitants in approximately 300 hectares, or between 67 and 134 persons per hectare. The V communities will be surrounded by main roads.

Each class V community will consist of four class IV communities of about 10,000 persons each. Their centres will be linked to each other and to the centre of the class V community by internal streets and a network of parks and pedestrian walks. Each class IV community will in turn be subdivided into class III

communities centred around an elementary school and consist of some 3,000 inhabitants. It will also have a commercial centre, teahouse and mosque. In addition, light industries and craft industries will be located on the outskirts along the rapid-transit lines.

Each class III community is subdivided into class II communities, centred around a playing-field, and class I communities, centred around a garden or plaza. All activities will be classified according to the various levels of communities.²³ Each community is expected to have different types of dwellings, though such standardized features as patio, terrace, and cross ventilation will be maintained as much as possible.

Technical and financial limitations also influenced the planning of the homes at Chandigarh, where the high cost of window glass led to houses with small openings, and the low cost of labour to the extensive use of bricks. Furthermore, to facilitate mass production, the doors, windows, shelves and ventilators, were standardized.²⁴ Fourteen categories of dwellings were established, the cost and design of which were determined by the proportion of its income each group could afford to apply to rent. The most costly categories were detached houses and the least expensive groups were attached.

LAND TENURE

One of the attractions of a sparsely inhabited site for a new capital city is, of course, the opportunity for the Government to purchase a large tract of land at low cost and to sell or lease the land once it has been developed. Naturally, the cost of expropriating the land within the limits of an existing large metropolis would be prohibitive.

At Islamabad, private investment will be concentrated in construction and in the purchasing or leasing of land, dwellings and shops which the Government has developed.²⁵ The financing of Canberra will rest, in the first instance, on the development of the land for leasing to private builders and investors wishing to build shops, factories, offices and other commercial facilities, and to private groups for the construction of clubs, schools, churches and other community buildings.²⁶

In Brasília, the process was similar. The Government, through the agency authorized to build the new capital, supervised the first stages of development because it owned the land and was able to ensure observance of building standards. Certain areas have been or will be ceded to foreign nations for the construction of their embassies. Thus, generally speaking, the principle has prevailed, although applied in varying degrees,

²² Doxiadis Associates, *Islamabad — summary of final programme and plan*, op. cit.

²⁴ Special issue on Chandigarh. *Marg*, a magazine of the arts (Bombay, Marg Publications), vol. XV, No. 1, December 1961.

²⁵ Doxiadis Associates, *Islamabad — summary of final programme and plan*, op. cit.

²⁶ Government of Australia, the National Capital Development Commission, op. cit.

²² See *L'Architecture d'aujourd'hui* (Boulogne) No. 90, June-July 1960, and pp. 109-119, *Brasília*, uma publicação Acropole, 1960.

that the land on which the three new capitals are to be built should be utilized to best advantage for the entire community.

PLANNING AND CONSTRUCTION

In the three cases under study, public bodies having a considerable degree of autonomy were created. Important lessons of procedure may be learned from the case of Canberra because it was the earliest. An international competition was held in 1911 to provide an urban plan for the future capital of Australia. The plan by the United States architect, Walter Burley Griffin, was chosen from the 137 plans submitted, and his design, with minor changes, is basically the one still in existence. Griffin's plan was no sooner accepted than it came under severe criticism, and it was not acted upon for many years. In any event, there appears to have been no real urge to transfer the capital at that time.

In 1958, a report on the future development of the capital was submitted to the Government.²⁷ The Government decided to establish a National Capital Development Commission. The planning of Canberra then entered a more dynamic phase, which coincided with increased interest by the Australian Government in the problems of its capital city. The Commission uses funds allocated to it annually from the national budget and hopes that an increasing proportion of the city's development will be privately financed.²⁸

When the Government of Pakistan decided in 1959 to set up the Federal Capital Commission, it gave the Commission the task of preparing the master plan and of carrying out the construction programme for the new capital. The Commission employed Doxiadis Associates, an Athens firm of consultants, to advise it and eventually to design the entire layout of the metropolitan area of Islamabad. When the preliminary plan of the city was submitted in May 1960, the Commission was replaced by the Capital Development Authority, which was responsible for the entire development of the city.

It is hoped that Islamabad will develop at a faster rate than Canberra and on a larger scale than Canberra or Brasília. Five-year programmes have been drawn up for the construction of the city. There will be a steady proportional increase in private investments. Although public investments will account for 98 per cent of the total during the first year of construction and 89.3 per cent of the total during the first five years, the planners hope that private investments will equal public investments in ten years and will continue to account for a larger percentage each year thereafter.

On 21 April 1960, President Juscelino Kubitschek inaugurated Brasília as the new capital of Brazil, follow-

ing a period of only five years of intense activity after the definitive selection of the site of the new capital. In September 1956 a state body, NOVACAP, was established with sufficient autonomy to deal with all the aspects and phases of the creation of Brasília—design, co-ordination of investments, and construction. The plan for Brasília was the result of a national competition, in which Lucio Costa's design was chosen from among the twenty-six submitted. The only information given to the competitors by NOVACAP, which set the competition, was the topographical setting, an open plain and a large artificial lake.²⁹ This is why the competitors' ideas concerning the total population of Brasília varied so widely and why the plans submitted place all the emphasis on design—a purely urban design which ignores regional questions or sociological and economic aspects of the city.

Apart from its objective merits, Costa's design also met the urgent political requirement that Brasília should become a reality in the space of only three years. The urgency of the transfer was the second technical limitation placed on the competitors. Those who entered the competition, which began in September 1956, were required to plan an urban system and a technical structure that could be inaugurated in April 1960. Three and a half years were allowed for the planning and construction of a city which was to serve a nation for centuries.

CONCLUSIONS

The responsibility for the planning and construction of a capital city should be a national one, since the success of the new capital will have practical and symbolic implications for the future of a whole nation.

However, the experience gained at Canberra, Islamabad and Brasília raises a number of questions. For example, can a city which is to fulfil the role of a capital be planned exclusively for that role? In Brazil, an earlier example, although naturally on a much smaller scale, was provided by the city of Goiânia. Goiânia, designed for a small population and a limited administrative role, grew to five times its planned population in a few years. It seems obvious that a planned urban centre in a new and unpopulated area which will have to play the role of a commercial, cultural and banking centre cannot be planned almost exclusively for a single service function. Brasília will have a tremendous commercial impact on the Brazilian interior, and particularly on the region under its immediate influence. However, no projections have been found showing to what extent the new capital should play other roles, apart from those logically evolving from its own needs, in addition to national administration.

Assume that, at least for supplies, the potential of the region has been carefully studied and Brasília is assured adequate services. But what will the converse relationship be—the impact of Brasília on its sub-region? What pattern of urban and rural distribution will result in this

²⁷ William Holford's report, presented in January 1958 and entitled "Observations on the future development of Canberra", was summarized in his article of October 1958 in *The Town Planning Review* (Liverpool). See Holford, op. cit.

²⁸ Government of Australia, the National Capital Development Commission, op. cit.

²⁹ Jorge Wilhelm, op. cit.

sub-region from the construction of Brasília? In what way will the apparently unplanned development of this sub-region affect the economic base and therefore the structure of the work force which will be resident at Brasília? How might these factors, if taken into account, have affected the variety and scope of the functions of Brasília, and therefore the physical planning for these functions?

It seems clear that one of the aims of the Government and the planners was to preserve the administrative character of Brasília, and the isolation of the site will make it easier to achieve this aim. However, is this desirable? Might it not perhaps be possible in the future, through a better distribution of functions, to achieve a more balanced demographic development and a less burdensome economy? Another question is how and, more seriously, to what extent the efficiency of the Brazilian Government has been affected by the transfer of the capital to a city which was not yet adequately equipped. Would it not have been preferable to construct and equip the city, to strengthen the economy of the region, and then to transfer the capital to its new seat?

Brasília tends to repeat the mistakes made at Canberra, which the Australian Capital Development Commission is trying to put right. In Islamabad the variety of functions introduces a very interesting variant not found in Brasília or Canberra. Can a new capital city be treated solely as a symbol? The goal of diversifying the economic base should be studied with as much care as the political value of a new capital. The fact that a city is a nation's capital is no reason for making it a drain on the nation's finances or allowing it to operate at a loss. While appreciating the value of the symbol, in addition to providing practical solutions, which can stir the imagination of a nation's people, a new capital is first and foremost a city, an environment in which a large number of social and economic activities can be suitably interrelated within the city and within a region. A capital city's failure to create a dynamically propitious environment might have unforeseeable implications for a nation's future.

If we anticipate what the newly independent nations may want and if we consider what projects may be feasible, is the creation of a new capital city at so early a stage of their development the solution to their political and administrative problems? Again, how long should it take to build a capital, even if financial problems can be solved? Which is better for the people who are to live there, rapid growth or gradual development?

The creation of a new capital should be envisaged dispassionately. It should be, not the glory of a leader, but the hope of a whole people. The need for it should therefore be analysed coldly and evaluated as one of the many short-term and long-term projects which a nation wishes to undertake. The capital of a nation cannot be constantly shifted. Like the great works of a society at a given moment of its history, it has an emotional as well as an economic and social impact. There will therefore be a psychological moment, as well as an

economic moment and a political moment, for its creation. It may be a negative policy to force the issue, to bring it into existence on a frail foundation, to mortgage the nation at an uncertain period of its development by diverting the necessary investments from other programmes already in progress. In addition, if development of a vast region is desired, which course will be most effective: the concentrated impact of a Brasília, or the impact of a number of centres of different kinds, with complementary functions and an influence over a wider area?

Moreover, if it is desirable to construct a new capital—or any city—what are the advantages and disadvantages of choosing a medium-sized city from among those which may exist in the particular region and creating the new capital as a parallel development, using existing labour and skills, infrastructure and services? It may well be that the immense advantages offered by an active city, particularly in the first phases of construction, will justify the higher cost of land, perhaps even for a site without the best natural conditions. In the United Kingdom, the experiment of constructing new towns on a base of smaller populations already *in situ* has proved quite satisfactory, from the standpoint of the acclimation of the new inhabitants and of the services which cities need if they are to function smoothly during the first phases.

The hopes which the nation places in the new capital are one of the reasons for massive migration to such cities. There will be more migration of this kind in the developing countries than in the developed. There are always vast numbers of persons without specific skills or regular employment. They increase the demand for services and create an atmosphere of poverty which does little to enhance the role the new capital is expected to play.

Because of its slow development Canberra was able to keep these problems well under control, and the high standard of living throughout Australia gives hope that there will not be more migration to Canberra than is strictly necessary and also makes possible the investments required for housing and services in the new capital. Rawalpindi will act as a fairly effective buffer to absorb the inevitable impact of the construction of Islamabad. Its services will no doubt be taxed and, because of the ambitious development schedules for Islamabad, Rawalpindi will experience difficult periods. The case of Brasília is extreme, and the plan is in danger of being distorted. The new arrivals, with or without jobs, have settled in several large spontaneous satellites which together were larger than Brasília itself in 1961. Before the inauguration of Brasília, Cidade Livre was one of the largest commercial centres in Brazil, with twenty banks and offices of all the airlines, but with proper water supplies for only 20 per cent of the population.³⁰ Brasília's satellites are all precarious, consisting of

³⁰ "Crisis in Brasília", *Jornal do Brasil*, abstracted in *Ekistics* (Athens), vol. XIV, No. 83, October 1962, p. 143.

wooden shacks and hardly any services. These problems can probably still be solved if decisive action can be taken.

The building of new capital cities is evidently still a new and immature social undertaking. But the three capital cities examined here do present a highly valuable contemporary experience in consciously conceiving and creating new human settlements as vital national symbols

and, not the least, as centres to promote and guide national development. Canberra is coming to life, Brasília exists, and Islamabad is getting under way. The three examples are three laboratories : their development should be carefully studied to assist the planning and construction of future capital cities, and simply of new towns, which will inevitably have to be planned and constructed in this century.

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Annexes

I. UNITED NATIONS GROUP OF EXPERTS ON METROPOLITAN PLANNING AND DEVELOPMENT

1. LIST OF PARTICIPANTS

EXPERTS

- C. F. Ahlberg, Professor of Town Planning, Royal Institute of Technology, Stockholm, Sweden
- P. N. Blockhine, Corresponding Member of the Academy of Building and Architecture, Union of Soviet Socialist Republics
- Luther Gulick, President, Institute of Public Administration, New York, United States of America
- S. Kobe, Director, Institute for Research in Productivity, Waseda University, 1 Chome, Totsuka—Machi, Shingiku, Tokyo, Japan
- Luis Lander, Head, Banco Obrero, Caracas, Venezuela
- A. Molinari, Associazione per lo Sviluppo del' Industria nel Mezzogiorno, Villa di Porta Pinciana 6, Rome, Italy
- M. Riad, Director-General, Cairo Municipality, Cairo, United Arab Republic
- J. Riby-Williams, Principal Secretary, Ministry of Education and Social Welfare, P.O. Box 84, Accra, Ghana
- C. N. Vakil, Professor of Economics, University of Bombay, Bombay, India

UNITED NATIONS BODIES

United Nations Secretariat

- Ernest Weissmann, Assistant Director in charge of Housing, Building and Planning, Bureau of Social Affairs
- O. Weerasinghe, Chief, Physical Planning Section, Housing, Building and Planning Branch, Bureau of Social Affairs
- Ben Reiner, Steel, Industry and Housing Division, Economic Commission for Europe
- Emil J. Sady, Programme Officer, Division for Public Administration

Specialized Agencies

United Nations Educational, Scientific and Cultural Organization

- J. D. N. Versluys, Chief, Socio-Economic Unit, Department of Social Sciences

World Health Organization

- A. Mochi, Public Health Administration, Geneva, Switzerland
- P. Pavanello, Regional Office for Europe, Copenhagen, Denmark

Swedish Working Committee for the Conference

- C. F. Ahlberg, Kungl. Tekniska Högskolan
- U. Ahrén, Kungl. Tekniska Högskolan
- J. Garpe, Borgarråd (Commissioner—the Town of Stockholm), Stockholms Stadsförvaltning
- Ingrid Grundström (Conference Officer)
- Margareta Hagberg, Förste Sekreterare (First Secretary), Svenska Institutet

- S. Heppling, Direktör (Director), Svenska Institutet

- I. Hörlén, Kanslichef (Administration Director), Stockholms Stadsförvaltning

- A. Nordberg, Direktör (Director), Stockholms Stadsförvaltning

- G. Sidenbladh, Stadsbyggnadsdirektör (Town Building Director), Stockholms Stadsförvaltning

- E. Wannfors, Avdelningsdirektör (Bureau Director), Kungl. Byggnadsstyrelsen (Liaison Officer)

2. LIST OF BACKGROUND PAPERS AND OTHER DOCUMENTS

BACKGROUND PAPERS

- Social factors of metropolitan planning in Western Europe — E. de Vries, Director, Institute of Social Studies, The Hague, Netherlands

- Metropolitan planning in Yugoslavia — Dusan Stefanović, Counsellor, Federal Institute for Town Planning and Housing, Yugoslavia

- Metropolitan planning in Poland — Julius Gorynski, Deputy Minister of Communal Affairs, Warsaw, Poland

- Metropolitan planning in India — G. Mukharji, Chairman, Central Regional and Urban Planning Organisation, New Delhi, India

- Ekistics and metropolitan planning in the Near and Middle East — Athens Technological Institute

- Economic factors of metropolitan planning — M. J. Wise, London School of Economics, University of London, United Kingdom

- Administrative factors of metropolitan planning in Western Europe — A. Prothin, Ministry of Housing and Reconstruction, France

- Physical factors of metropolitan planning — Bo Fredzell, Architect, Chief, Regionplanekontoret, Sweden

OTHER PAPERS SUBMITTED

- Report on the United Nations Seminar on Regional Planning (United Nations document ST/TAA/SER.C/35)

- United Nations Bulletin on Regional Planning (United Nations publication, Sales No.: 59.IV.7)

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- Report on the Seminar on Urbanization Problems in Latin America organized by the United Nations and UNESCO in co-operation with ILO and the American States (United Nations, document E/CN.12/URB/26/Rev.1)

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- (a) Health planning in urbanization; (b) Planning of public health services — World Health Organization

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Some policy issues regarding urban renewal — Economic Commission for Europe, Housing Committee, Symposium on Urban Renewal

Metropolitan planning in Scandinavia — Ingve Larsson

Town and country planning in Sweden — Ivar Jonsson, Head, Planning Office, National Board of Building and Planning

The regional plan for the Stockholm area — C. F. Ahlberg, Professor of Town Planning, Royal Institute of Technology, Stockholm

Planning problem in Stockholm — G. Sidenbladh, Town Building Director

Memorandum relating to zone expropriation in lower Norrmalm in Stockholm

Metropolitan planning problems in the Netherlands — G. A. Wissink, Chief, Research Division, Government Physical Planning Service, Netherlands

Some additional observations on planning in the Netherlands — G. A. Wissink

The scope and purpose of metropolitan planning and development in the United States — Robert C. Weaver, Administrator, Housing and Home Finance Agency, United States of America

Urban problems and planning with special attention to transport problems in Tokyo — Susumu Kobe, Director, Institute for Research in Productivity, Waseda University, Tokyo

Outlines of the metropolitan development problems of Prague — Jiří Novotný, Chief Architect, Deputy of the City of Prague and J. Stván, Ing. Architect, The Research Institute for Building and Architecture, Brno

Physical considerations of metropolitan planning — M. Riad, Director-General, Cairo Municipality

Physical and economic planning in metropolitan planning — C. F. Ahlberg

Provisions of welfare facilities and public utilities in the cities of the Union of Soviet Socialist Republics — P. N. Blokhine, Architect, Corresponding Member of the Academy of Building and Architecture, Moscow

Administrative considerations and metropolitan planning and development — Luther Gulick, Chairman of the Board, Institute of Public Administration, New York

Metropolitan problems in the Federal Republic of Germany — Hans Högg, Professor, Architect, Deutsche Akademie für Städtebau und Landesplanung (German Academy for City and Regional Planning)

II. UNITED NATIONS SYMPOSIUM ON THE PLANNING AND DEVELOPMENT OF NEW TOWNS

1. LIST OF PARTICIPANTS

EXPERTS

T. M. Aluko, Controller of Works Services, Ministry of Works and Transport, Ibadan, Nigeria

C. F. Ahlberg, Professor in Town Planning, Royal Institute of Technology, Stockholm, Sweden

A. M. Abou-Zeid,* Professor of Sociology, University of Alexandria, United Arab Republic

Eduardo Neira-Alva, CENDES — Universidad Central de Venezuela, Apartado 6622, Caracas, Venezuela

N. V. Baranov, Deputy Chairman, State Committee for Civil Engineering and Architecture, Pushkin Street, 24, Moscow, Union of Soviet Socialist Republics (Chairman of Theme I of Symposium)

Alternate

V. A. Shkvarikov, Director, Central Institute for Town and Regional Planning, Moscow, Union of Soviet Socialist Republics (Co-executive Secretary of Symposium)

Aryeh Doudai, Director-General, Institute for Planning and Development, 123 Hachahmonain Street, Tel-Aviv, Israel

Mirghani El-Amir,* Sudan Gezera Board, Sudan

Jorge E. Hardoy, Director, Institute of Urban and Regional Planning, National University of Litoral, Santa Fe 2008, Rosario, Argentina

Pierre Jeanneret,* Chief Architect and Town Planning Adviser, Chandigarh, Punjab, India

Susumu Kobe, Transport and Communications Division, Economic Commission for Asia and the Far East, Rajadamnern Avenue, Bangkok, Thailand

B. Malisz, Professor of Physical Planning, Kredytowa 8 No. 1, Warsaw, Poland

William A. Robson, Professor Emeritus of Public Administration, London School of Economics and Political Sciences, 48 Lanchester Road, London N. 6, England

Lloyd Rodwin, Chairman, Faculty Committee, Joint Centre for Urban Studies of the Massachusetts Institute of Technology and Harvard University, 66 Church Street, Cambridge, Mass., United States of America

S. Santoso, Head, Urban and Regional Planning Department, Ministry of Public Works and Power, Djalan Hajam Wuruk, No. 3, Djakarta, Indonesia

Khalid Shibli, Chief, Physical Planning and Housing Sector, National Planning Commission, Karachi, Pakistan

UNITED NATIONS BODIES

United Nations Secretariat

Ernest Weissmann, Assistant Director in Charge of Housing, Building and Planning, Bureau of Social Affairs (representing the Secretary-General of the United Nations)

Miss Julia Henderson, Director, Bureau of Social Affairs

Oliver Weerasinghe, Chief, Planning and Urbanization Section, Housing, Building and Planning Branch, Bureau of Social Affairs (Executive Secretary of Symposium)

Yuriy Sokolov, Chief, Building Section, Housing, Building and Planning Branch, Bureau of Social Affairs (Liaison Officer of the Symposium)

* Did not attend.

Igor Krestovsky, Chief, Small-Scale Industry Section, Centre for Industrial Development

B. F. Reiner, Chief, Housing, Building and Planning Section, Economic Commission for Europe, Palais des Nations, Geneva, Switzerland

Carl Frisen, Regional Demographic Adviser, Economic Commission for Asia and the Far East, Bangkok, Thailand

Specialized Agencies

World Health Organization

L. Kaprio, Director, Division of Public Health Services, Geneva, Switzerland

Joseph Lanoix, Chief, Sanitation and Housing Unit, Geneva, Switzerland

OBSERVERS

Charles Ascher, 75 Central Park West, New York, N.Y. 10023 (representing the International Union of Local Authorities and the International Federation for Housing and Town Planning)

Edward P. Eichler, Centre for Planning Project and Development Research, Institute of Urban and Regional Development, University of California, Berkeley, California, United States of America

Victor Fischer, Assistant Administrator, Housing and Home Finance Agency, United States Government, Washington 25, D.C., United States of America

Lyle C. Fitch, President, Institute of Public Administration, 684 Park Avenue, New York 21, N.Y. (representing the International Institute of Administrative Sciences)

Jiri Klima, State Planning Commission, Nabrizi kpt. Jarose 1000, Prague

Antoni R. Kuklinski, Committee for Space Economy and Regional Planning, Polish Academy of Sciences, Krakowski Przedmiescie 30, Warsaw 64

Miss Mary Megee, Washington University, St. Louis, Missouri, United States of America

John W. Reys, Professor, Department of City and Regional Planning, College of Architecture, Cornell University, Ithaca, New York, United States of America

Z. Saman, State Commission for Construction, Prague

Atlee Shidler, The Washington Centre for Metropolitan Studies, 1726 Pennsylvania Avenue, N.W., Washington, D.C., United States of America

Joseph E. Slater, Associate Director of International Affairs, Ford Foundation, 477 Madison Avenue, New York 22, N.Y.

J. Stven, Research Institute of Building and Architecture, Brno

Miss Jacqueline Tyrwhitt, Professor of City Planning and Urban Design, Harvard University, United Nations Consultant, Athens Centre of Ekistics, 24 Strat Symou, Athens 136, Greece

ADVISERS TO THE DELEGATES OF THE GOVERNMENT OF THE SOVIET UNION

P. N. Blokhine, Professor, Central Research and Design Institute for Type and Experimental Design of Dwellings, Moscow

V. A. Butuzov, Secretary of the Union of Soviet Socialist Republics Union of Architects, Member of State Committee of Civil Engineering and Architecture, Moscow

N. Y. Colley, Professor, Chairman of the Architectural Section of the Union of Soviet Societies, Friendship and Cultural Relations with Foreign Countries, Moscow

N. F. Evstratov, Director, Moscow Master Plan Institute, Moscow

G. M. Fomin, Head, Moscow Chief Architectural and Planning Authority, Moscow

V. I. Lukjanov, Deputy Director, Central Research and Design Institute of Town Building, Moscow

I. S. Nikolaev, Professor, Director of the Moscow Architectural Institute, Moscow

G. M. Orlov, First Secretary, Union of Soviet Socialist Republics Union of Architects, Moscow

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